ORDER NO. AD9211378C8

Service Manual

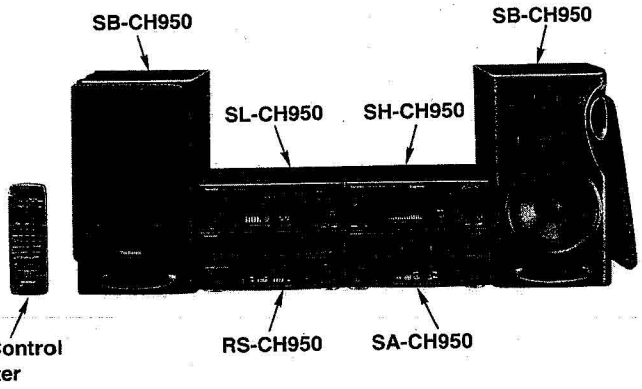
Compact Disc Player

Compact Disc Player

SL-CH950

COMPACT disc DIGITAL AUDIO

MASH* multi-stage noise shaping



Colour

(K) ..... Black Type

Area

Suffix for Model No.	Area	Colour
(E)	Europe, Asia, Latin America, Middle Near East, Africa and Oceania	(K)

System: SC-CH950

Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

SL-CH550 TRAVERSE DECK SERIES (RAE0111Z)

SPECIFICATIONS

(DIN 45 500)

■ Audio	
DA converter	1 bit 2 DAC MASH
■ Pickup	
Wavelength	780 nm
Laser power	No hazardous radiation is emitted (with safety protection)
■ General	
Dimensions (W×H×D)	270×89.5×258.5 mm
Weight	2.1 kg

Notes:

1. Specifications are subject to change without notice.
2. Weight and dimensions are approximate.
3. Total harmonic distortion is measured by the digital spectrum analyzer.

* ●Technics (or Panasonic) developed the world's first MASH type DAC and ADC. MASH technology was invented by NTT (LSI Labs).
●MASH is a trademark of NTT.

System	Sound processor	Tuner amplifier	Compact disc player	Cassette deck	Speakers
SC-CH950	SH-CH950	SA-CH950	SL-CH950	RS-CH950	*SB-CH950

***Europe...Made in PAES**

Technics

■ CONTENTS

	Page
•HANDLING PRECAUTIONS FOR TRAVERSE DECK	2
•PRECAUTION OF LASER DIODE	2, 3
•LOCATION OF CONTROLS	3, 4
•DISASSEMBLY INSTRUCTIONS	5~9
•SCHEMATIC DIAGRAM	10~15
•PRINTED CIRCUIT BOARD DIAGRAM	16~18
•WIRING CONNECTION DIAGRAM	19
•MEASUREMENTS AND ADJUSTMENTS	20, 21
•NEW DIGITAL SERVO CIRCUIT	22
•TROUBLESHOOTING GUIDE	23, 24
•FUNCTION OF IC TERMINALS	25~28
•BLOCK DIAGRAM	29~32
•REPLACEMENT PARTS LIST	33~35
•CABINET PARTS LOCATION	36
•LOADING UNIT PARTS LOCATION	37

■ HANDLING PRECAUTIONS FOR TRAVERSE DECK

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

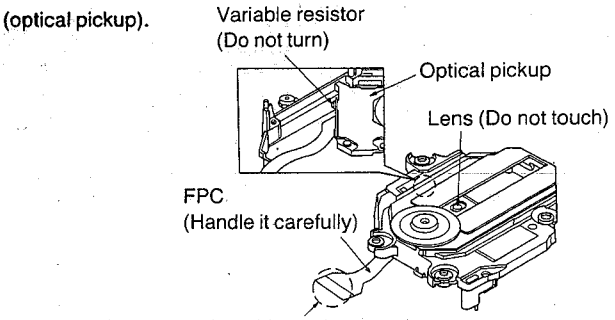
•Handling of traverse deck (optical pickup)

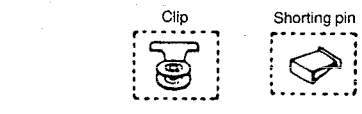
1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an anti-static shorting pin is inserted into the flexible board (FPC board). When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

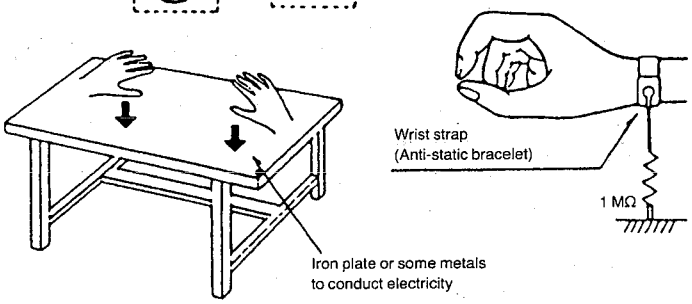
•Grounding for electrostatic breakdown prevention

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution:
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).







■ PRECAUTION OF LASER DIODE

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pick up lens.
Wave length: 780 nm
Maximum output radiation power from pick up: 100 µW/VDE

Laser radiation from the pick up unit is safety level, but be sure the followings:

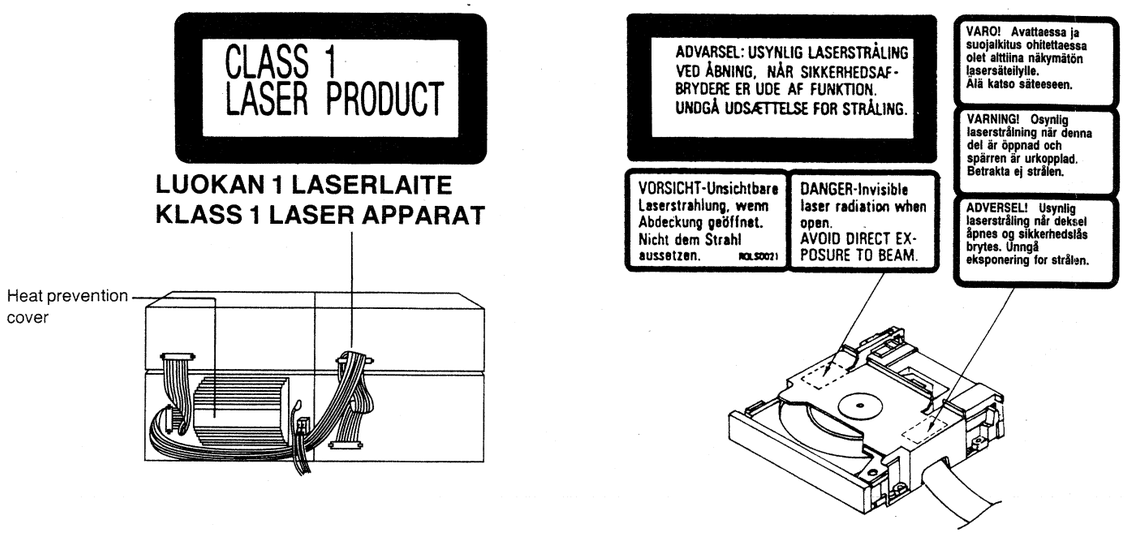
1. Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not lock at the focus lens using optical instruments.
4. Recommend not to lock at pick up lens for a long time.

ACHTUNG: Dieses produkt enthält eine laserdiode. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit abgestrahlt.

Wellenlänge: 780 nm
Maximale strahlungsleistung der laserinhelt: 100 µW/VDE

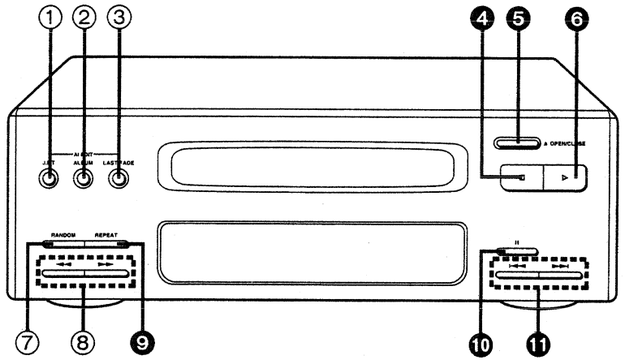
Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:

1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdiode gefährlich ist.
2. Den werksseitig justierten einstellregler der lasereinreit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.


CLASS 1
LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT
Heat prevention cover
ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT-Unsichtbare Laserstrahlung, wenn Abdeckung geöffnet. Nicht dem Strahl aussetzen.
DANGER-Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.
VARO! Avattaessa ja suojalkitus ohitettaessa olet alttiina näkymätön lasersäteilylle. Älä katso säteeseen.
VARNING! Osynlig laserstrålning når denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.
ADVERSEL! Usynlig laserstråling når deksel åpnes og sikkerhedslås brytes. Unngå eksponering for strålen.

NOTE:
Refer to the service manual for Model No. SA-CH950 (Order No. AD9211380C8) for information on "ACCESSORIES", "STACKING THE COMPONENTS", "CONNECTIONS" and "PACKAGING".

■ LOCATION OF CONTROLS



Note:
The functions indicated by the numbers with black background (for example ❹) can also be activated from the remote control.

① **Fit edit button (J. FIT)**
Press to activate the fit editing mode.

② **Sequential CD recording button (ALBUM)**
Press to activate the sequential CD recording mode.

③ **Last fade edit button (LAST FADE)**
Press to activate the fade out editing mode.

❹ **Stop button (□)**
Press to stop the disc play.

❺ **Disc tray open/close button (▲ OPEN/CLOSE)**
Press to open and close the disc tray.

❻ **Play button (▷)**
Press to start disc play and synchro start function.

⑦ **Random play button (RANDOM)**
Press to play the disc's tracks in random order.

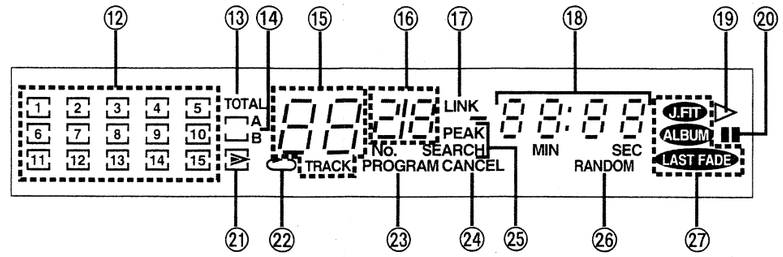
⑧ **Search buttons (◀◀, ▶▶)**
Press and hold to find the desired point on the track while in the play mode.

❾ **Repeat button (REPEAT)**
Press to activate the repeat mode.

❿ **Pause button (❚❚)**
Press to stop the disc play temporarily.

⓫ **Skip buttons (|◀◀, ▶▶|)**
Press to skip tracks.

●Display Panel



⑫ **Matrix display**
Shows the total number of tracks on a disc, and shows the current playing track by flashing.

⑬ **Total tracks indicator (TOTAL)**
Lights to show the total number of tracks edited on side A and B when you use the edit-recording from a compact disc.

⑭ **Tape side indicator (A, B)**
Shows which side of the cassette tape (A or B) will be recorded on when you use the edit-recording from a compact disc.

⑮ **Track number display**
Shows the total number of tracks, and current playing or recording track number.

⑯ **Program number display**
Lights together with the program indicator to show the programmed order.

⑰ **Link indicator (LINK)**
Lights to show the disc link is possible when you use the edit-recording from a compact disc.

⑱ **Time display**
Shows the total playing time on the disc, and elapsed play time of the current track.

⑲ **Play indicator (▷)**
Lights when you play a compact disc.

⑳ **Pause indicator (❚❚)**
Lights when you press the pause button to stop the disc play temporarily.

㉑ **Over indicator (⩥)**
Lights if there are 16 or more tracks on a disc.

㉒ **Repeat mode indicator (⮌)**
Lights during the repeat mode of a compact disc.

㉓ **Program indicator (PROGRAM)**
Lights during program play mode of a compact disc.

㉔ **Program cancel indicator (CANCEL)**
Lights when you cancel a program.

㉕ **Peak search indicator (PEAK SEARCH)**
In the edit-recording mode, lights when the compact disc player is automatically scanning the peak level on a disc. When peak search ends, "PEAK" flashes to indicate the peak level of a compact disc.

㉖ **Random play indicator (RANDOM)**
Lights during the random play mode.

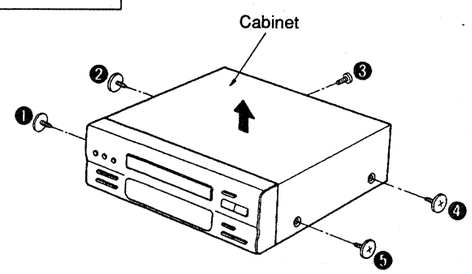
㉗ **Edit mode indicators (J. FIT, ALBUM, LAST FADE)**
J. FIT: Lights when you activate the fit editing mode.
ALBUM: Lights when you activate the sequential CD recording mode.
LAST FADE: Lights when you activate the fade out editing mode.

■ DISASSEMBLY INSTRUCTIONS

Warning: This product uses a laser diode. Refer to caution statements on page 2.
ACHTUNG: Die lasereinheit nicht zerlegen.
Die lasereilnheit dart nur gegen eine vom hersteller speziferte einheit ausgetauscht werden.
"ATTENTION SERVICER" Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1 — **Removal of the Cabinet**

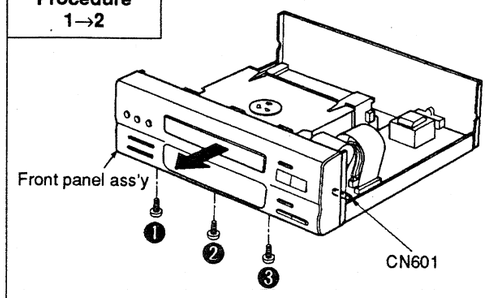
Procedure 1



1. Remove the 5 screws (❶~❺).
2. Remoce the cabinet in the direction of arrow.

Ref. No. 2 — **Removal of the Front Panel Ass'y**

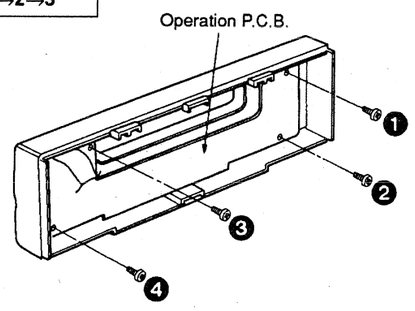
Procedure 1→2



1. Remove the connector (CN601).
2. Remove the 3 screws (❶~❸).
3. Remove the front panel ass'y in the direction of arrow.

Ref. No. 3 — **Removal of the Operation P.C.B.**

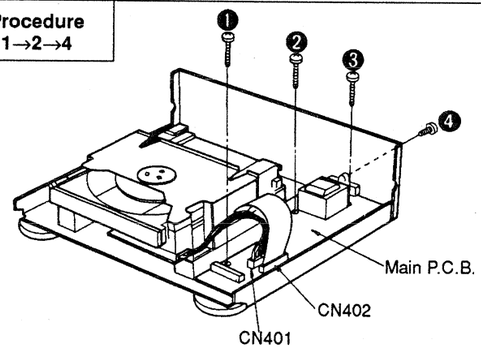
Procedure 1→2→3



• Remove the 4 screws (❶~❹).

Ref. No. 4 — **Removal of the Main P.C.B.**

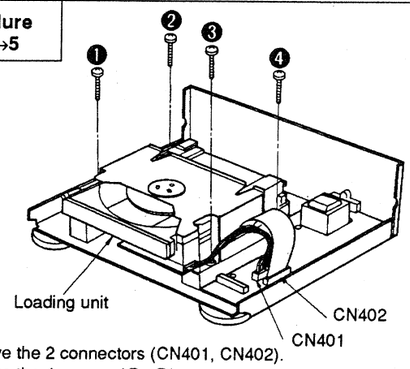
Procedure 1→2→4



1. Remove the 2 connectors (CN401, CN402).
2. Remove the 4 screws (❶~❹).

Ref. No. 5 — **Removal of the Loading Unit**

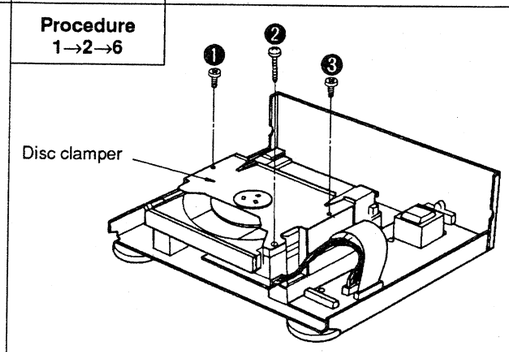
Procedure 1→2→5



1. Remove the 2 connectors (CN401, CN402).
2. Remove the 4 screws (❶~❹).

Ref. No. 6 — **Removal of the Disc Clamper**

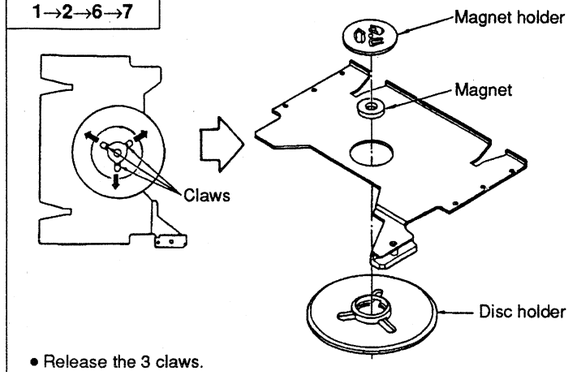
Procedure 1→2→6



• Remove the 3 screws (❶~❸).

Ref. No. 7 — **Removal of the Magnet Holder, Magnet and Disc Holder**

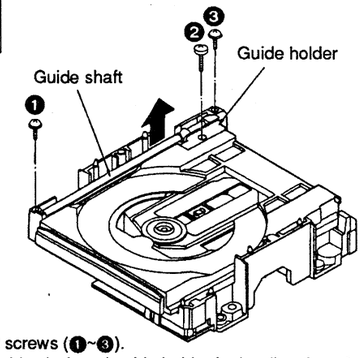
Procedure 1→2→6→7



• Release the 3 claws.

Ref. No. 8 — **Removal of the Guide Shaft and Guide Holder**

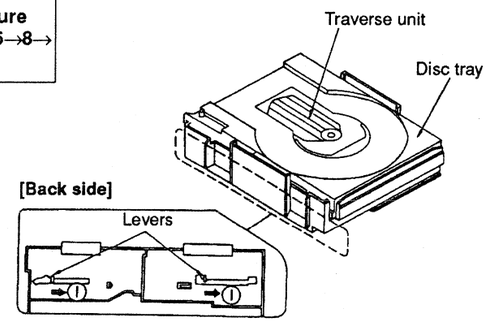
Procedure 1→2→6→8



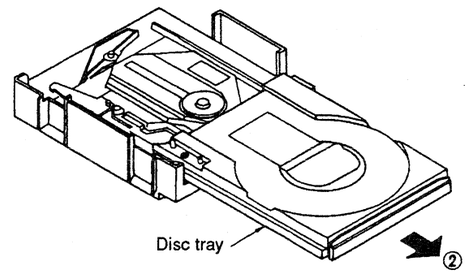
1. Remove the 3 screws (❶~❸).
2. Remove the guide shaft and guide holder in the direction of arrow.

Ref. No. 9 — **Removal of the Disc Tray**

Procedure 1→2→5→6→8→9



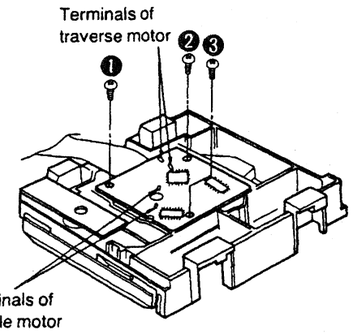
1. Push the 2 levers in the direction of arrow ① until the traverse unit goes down and the disc tray slightly in the direction of arrow ②.



2. Remove the disc tray in the direction of arrow ②.

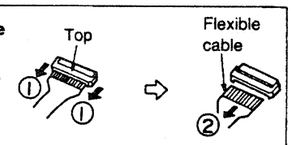
Ref. No. 10 — **Removal of the Servo P.C.B.**

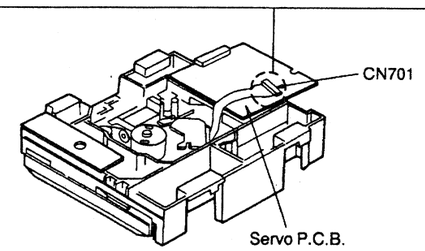
Procedure 1→2→5→10



1. Remove the 3 screws (❶~❸).
2. Unsolder the 2 terminals of spindle motor.
3. Unsolder the 2 terminals of traverse motor.

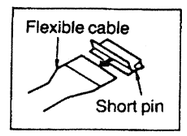
•Removal of the flexible cable
Push the top of the connector in the direction of the arrow ①, and then Pull Out the flexible cable in the direction of the arrow ②.





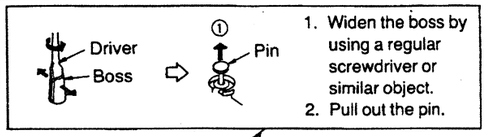
4. Remove the flexible cable (CN701).

Note:
Insert a short pin into the traverse unit flexible cable.
(Refer to "Handling precautions for traverse deck" on page 2)

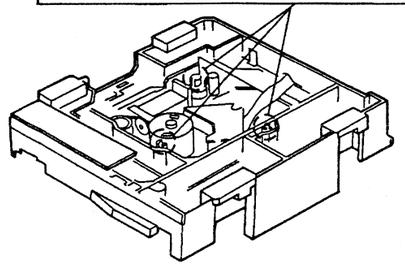


Ref. No. 11 — Removal of the Traverse Unit

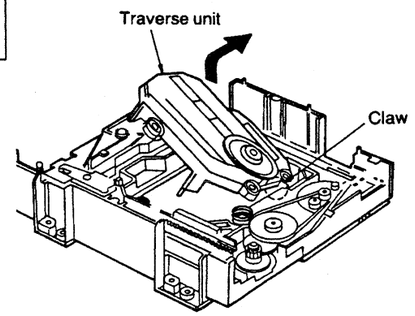
Procedure
1→2→5→6→8→9→10→11



1. Widen the boss by using a regular screwdriver or similar object.
2. Pull out the pin.



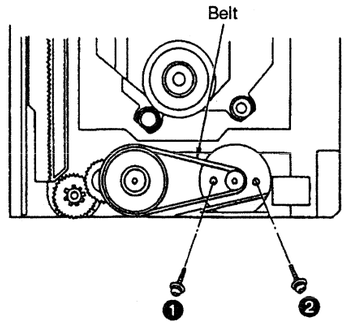
1. Remove the 3 pins in the direction of arrow ①.



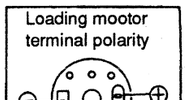
2. Release the claw and then remove the traverse unit in the direction of arrow.

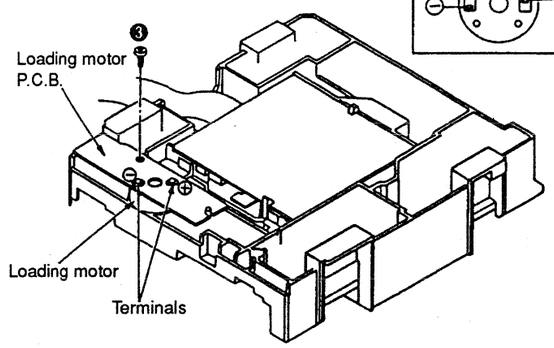
Ref. No. 12 — Removal of the Loading Motor P.C.B. and Loading Motor

Procedure
1→2→5→6→8→9→12



1. Remove the belt.
2. Remove the 2 screws (❶, ❷).

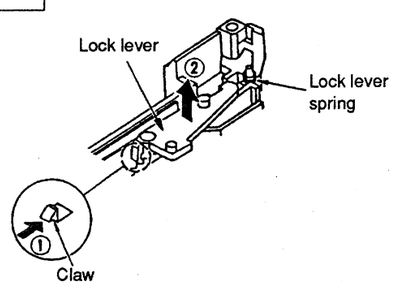




3. Remove the screw (❸).
4. Unsolder the 2 terminals of loading motor.

Ref. No. 13 — Removal of the Lock Lever

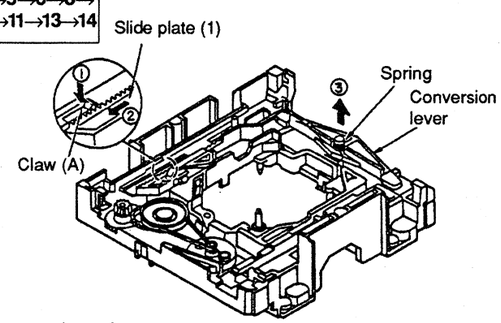
Procedure
1→2→6→8→9→13



1. Remove the lock lever spring.
2. Release the claw in the direction of the arrow ①, and then remove the lock lever in the direction of arrow ②.

Ref. No. 14 — Removal of the Conversion Lever

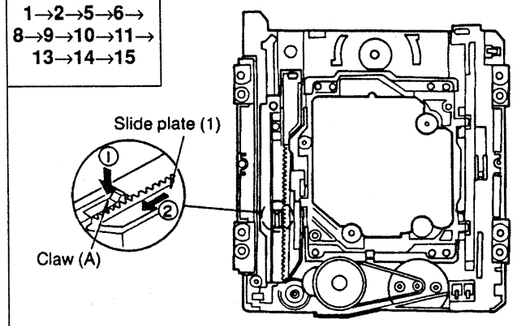
Procedure
1→2→5→6→8→9→10→11→13→14



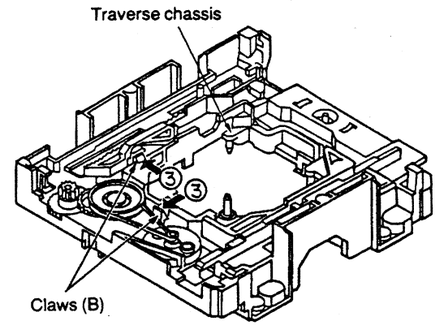
1. Remove the spring.
2. Push the claw (A) in the direction of arrow ①, and then move the slide plate (1) in the direction of arrow ②.
3. Remove the conversion lever in the direction of arrow ③.

Ref. No. 15 — Removal of the Traverse Chassis

Procedure
1→2→5→6→8→9→10→11→13→14→15



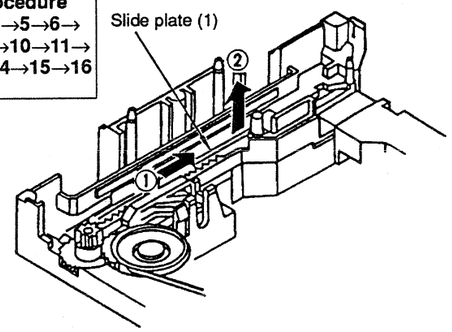
1. Push the claw (A) in the direction of arrow ①, and then move the slide plate (1) in the direction of arrow ②.



2. Push 2 claws (B) in the direction of arrow ③, and then remove the traverse chassis.

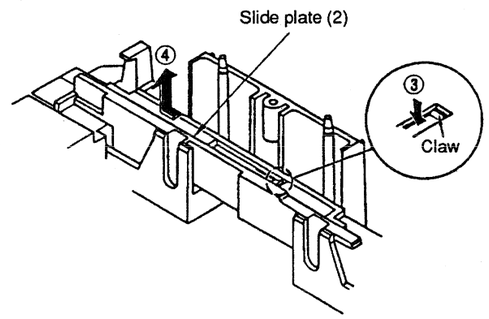
Ref. No. 16 — Removal of the Slide Plate (1) and Slide Plate (2)

Procedure
1→2→5→6→8→9→10→11→13→14→15→16



■ Removal of the Slide Plate (1)

- Move the slide plate (1) in the direction of the arrow ①, and remove the slide plate (1) in the direction of the arrow ②.

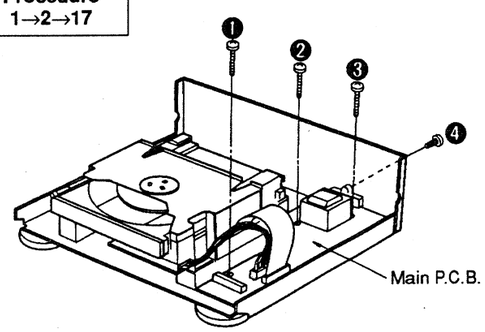


■ Removal of the Slide Plate (2)

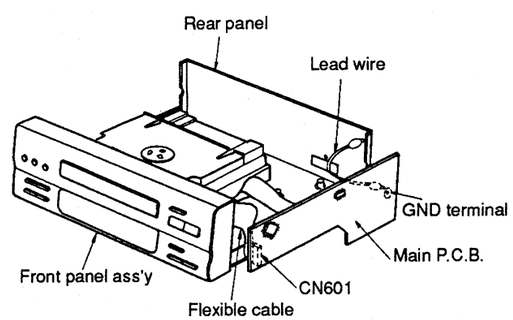
- Push the claw in the direction of arrow ③, and then remove the slide plate (2) in the direction of arrow ④.

Ref. No. 17 — How to check the Main P.C.B.

Procedure
1→2→17

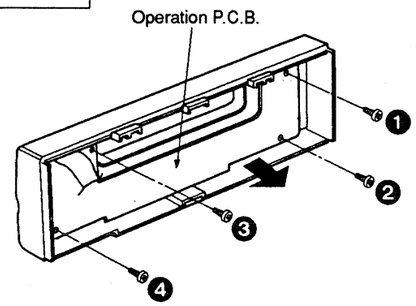


1. Remove the 4 screws (❶~❹).
2. Remove the main P.C.B. and then stand the main P.C.B. at the side of unit.

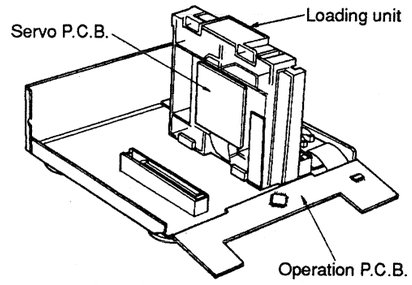


3. Reinstall the front panel ass'y to the unit and then connect the flexible cable (CN601).
4. Connect the GND terminal to the rear panel by the lead wire.
5. When checking the soldered surfaces of main P.C.B. and replacing the parts, do as shown above.

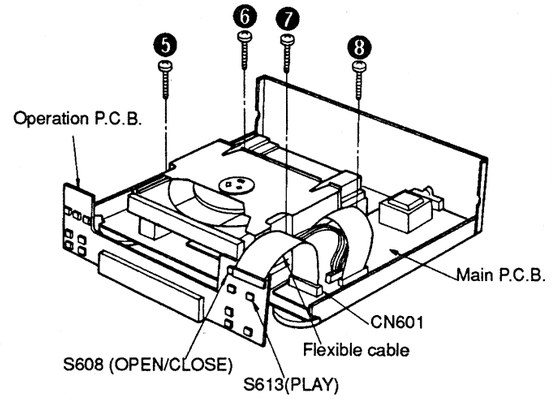
Ref. No. 18	How to check the Operation P.C.B. and Servo P.C.B.
Procedure 1→2→18	



1. Remove the 4 screws (❶~❹).
2. Remove the operation P.C.B..



5. Place the loading unit sideways as shown above.
6. When checing the soldered surfaces of the operation P.C.B. and servo P.C.B., do as shown above.



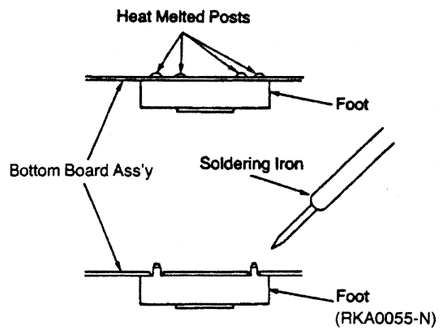
3. Remove the 4 screws (❺~❽).
4. Connect the flexible cable to connector (CN601).

To play a disc

1. Push the S608 (OPEN/CLOSE) switch so that the loading unit comes up.
2. Playing the test disc on the tray. Then, push the S608 (OPEN/CLOSE) switch to set the test disc.
3. Push the S613 (PLAY) switch to start the disc play.

●Replacement of the Foot

1. Remove the 4 heat melted posts on the Bottom board ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0055-N) on the Bottom board ass'y, melt the 4 posts with a soldering iron.



NOTE:
Please refer to pages 10-13 in the service manual for Model No. SL-CH550 (Order No. AD9208264C8) for information on "INSTALLING SERVO P.C.B.","INSTALLING OF GUIDE SHAFT","CD UNIT ASSEMBLY","INSTALLING DISC TRAY UNIT" and "INSTALLING DISC TRAY".

SL-CH950

■ SCHEMATIC DIAGRAM •OPTICAL PICKUP AND SERVO CIRCUIT (Parts list on pages 33 and 34)

A SERVO CIRCUIT

OPTICAL PICKUP ⚠

Q701 2SB709STW LASER POWER DRIVE

IC701 AN8802SCE IV SERVO AMP

IC702 MN66271RA SERVO PROCESSOR/DIGITAL SIGNAL PROCESSOR/DIGITAL FILTER/D/A CONVERTER

IC703 AN8389SE I FOCUS COIL/TRACKING COIL/ TRAVERSE MOTOR/ SPINDLE MOTOR DRIVE

M702 SPINDLE MOTOR

M701 TRAVERSE MOTOR

TRACKING COIL

FOCUS COIL

CN701

CN702 L ch OUT / A.GND / R ch OUT / +B (2) / D. GND / LD SW / TX / +B (1) / P. GND / MCLK / M DATA / MLD / SENSE / /FLOCK / /TLOCK / B LKCK / SQCK / SUBQ / D.MUTE / STAT / /RST / SMCK / REST SW

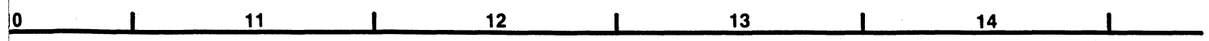
To **D** MAIN CIRCUIT (CN402) (Page 14)

TJ701 (RF)

TJ702 (VREF)

BEST EYE ADJ. VR701 10K(B)

S701 (REST)



Notes:

- ●S601 : R. Skip switch (|◀◀)
- ●S602 : F. Skip switch (▶▶|)
- ●S603 : Repeat switch (REPEAT)
- ●S604 : Random play switch (RANDOM)
- ●S605 : Last fade edit switch (LAST FADE)
- ●S606 : Sequential CD recording switch (ALBUM)
- ●S607 : Fit edit switch (J. FIT)
- ●S608 : Disc tray open/close switch (▲ OPEN/CLOSE)
- ●S609 : R. Search switch (◀◀)
- ●S610 : F. Search switch (▶▶)
- ●S611 : Stop switch (□)
- ●S612 : Pause switch (❚❚)
- ●S613 : Play switch (▷)
- ●S701 : Rest switch
- ●S790 : Disc tray close detection switch
- ●S791 : Disc tray open detection switch

●Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.
Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

No mark: CD STOP ( ): CD PLAY (1 kHz, L+R, 0 dB)

●Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution!
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- ●Cover the parts boxes made of plastics with aluminum coil.
- ●Ground the soldering iron.
- ●Put a conductive mat on the work table.
- ●Do not touch the legs of IC or LSI with the fingers directly.

●This schematic diagram may be modified at any time with the development of new technology.

●The supply part number is described alone in the replacement parts list.

Ref. No	Production Parts No.	Supply Parts No.
IC1	LM2940T5M	LM2940T5
IC801	BA4558FT1	SVIBA4558F

: Positive voltage line
: Negative voltage line
: CD signal line

■ SCHEMATIC DIAGRAM ●LOADING MOTOR, OPERATION AND MAIN CIRCUIT (Parts list on pages 33 and 34)

B OPERATION CIRCUIT

C LOADING MOTOR CIRCUIT

D MAIN CIRCUIT

IC602
LA5608M-TE-L
BUS LINE DRIVE / RESET/HALT

IC601
M38112M4100F
SYSTEM CONTROL & FL DRIVE

IC790
TA7291S
MOTOR DRIVE

IC401
LC66304A4935
SYSTEM CONTROL

FL DISPLAY

△FL601 (RSL0135-F)

To A SERVO CIRCUIT (CN702) (Page 11)

arts list on pages 33 and 34)

5 6 7 8 9 10 11 12 13 14

C LOADING MOTOR CIRCUIT

D MAIN CIRCUIT

To A SERVO CIRCUIT(CN702) (Page 11)

CN402

IC790

IC790
TA7291S
MOTOR DRIVE

LOADING MOTOR

S790 (CLOSE DET.)

S791 (OPEN DET.)

CP790 CN401

IC1
LM2940T5M
REGULATOR

Q4,5
2SD2037EFTA
REGULATOR

Q1
2SB1238QSTV6
REGULATOR

Q3
2SD2037EFTA
REGULATOR

Q8
2SC3311AQSTA
REGULATOR

Q10
UN4112TA
SWITCHING CONTROL

Q9
2SA1309AQSTA
REGULATOR

IC401
LC66304A4935
SYSTEM CONTROL

IC801
BA4558FTI
L.P. FILTER AMP

IC802
TC4066BFTPI
SWITCHING

PTI

CN601

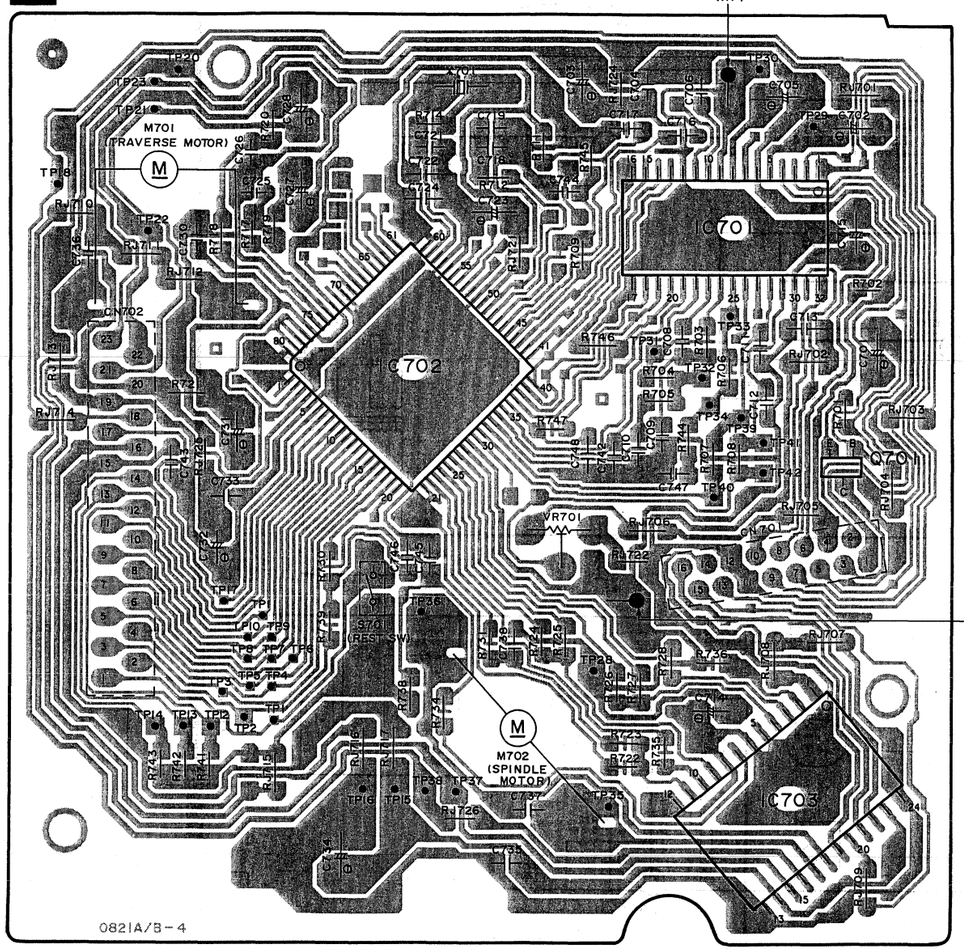
JK801
AC
BUS CLK
CT GND
BUS DATA
AC
DC GND
Rch LINE OUT
A.GND
Lch LINE OUT

To SA-CH950: JK201
RS-CH950: JK1

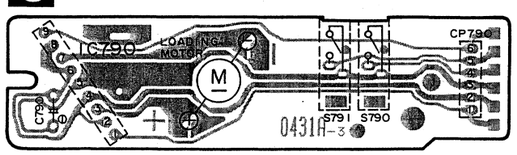
POWER SUPPLY POINT

■ PRINTED CIRCUIT BOARD DIAGRAM

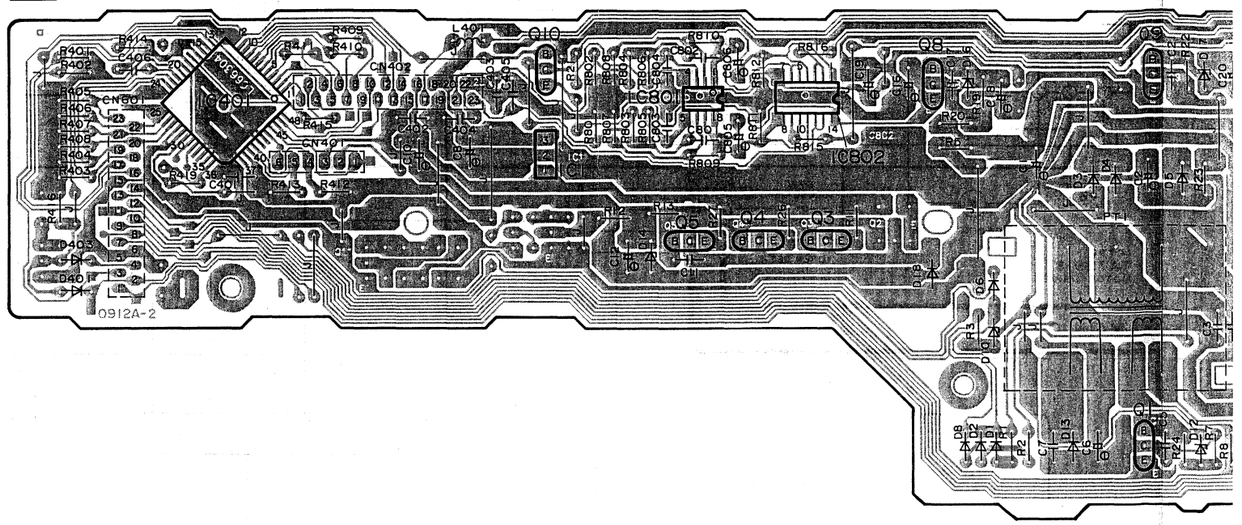
A SERVO P.C.B. (REPI391A-N)



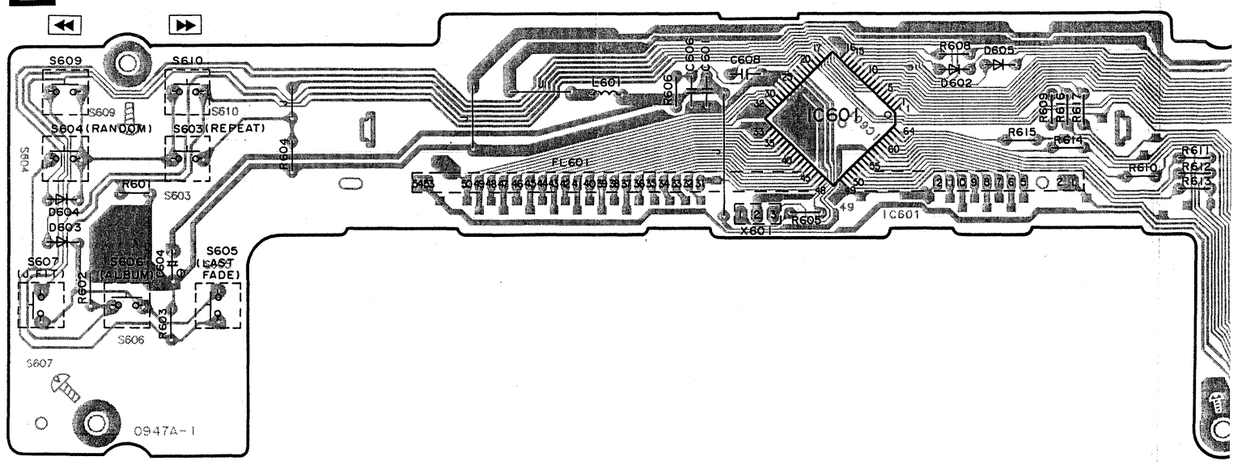
C LOADING MOTOR P.C.B. (REP0767)



D MAIN P.C.B. (REPI446A-M)

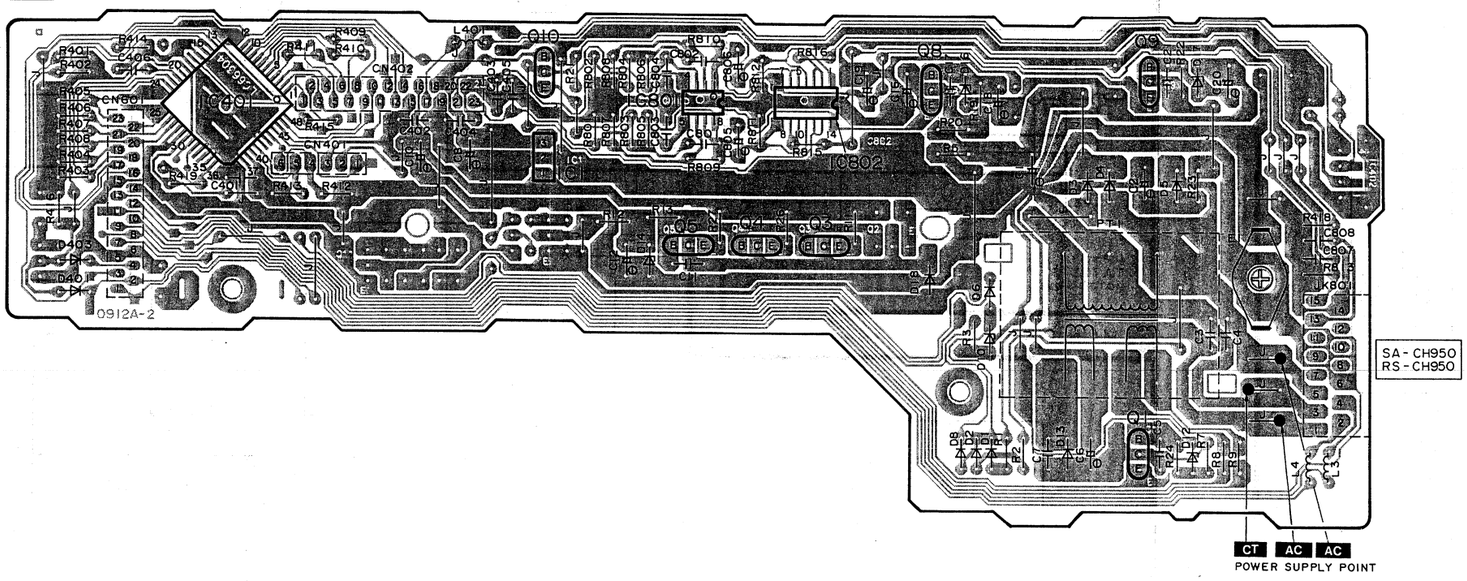


B OPERATION P.C.B. (REPI479A-S)

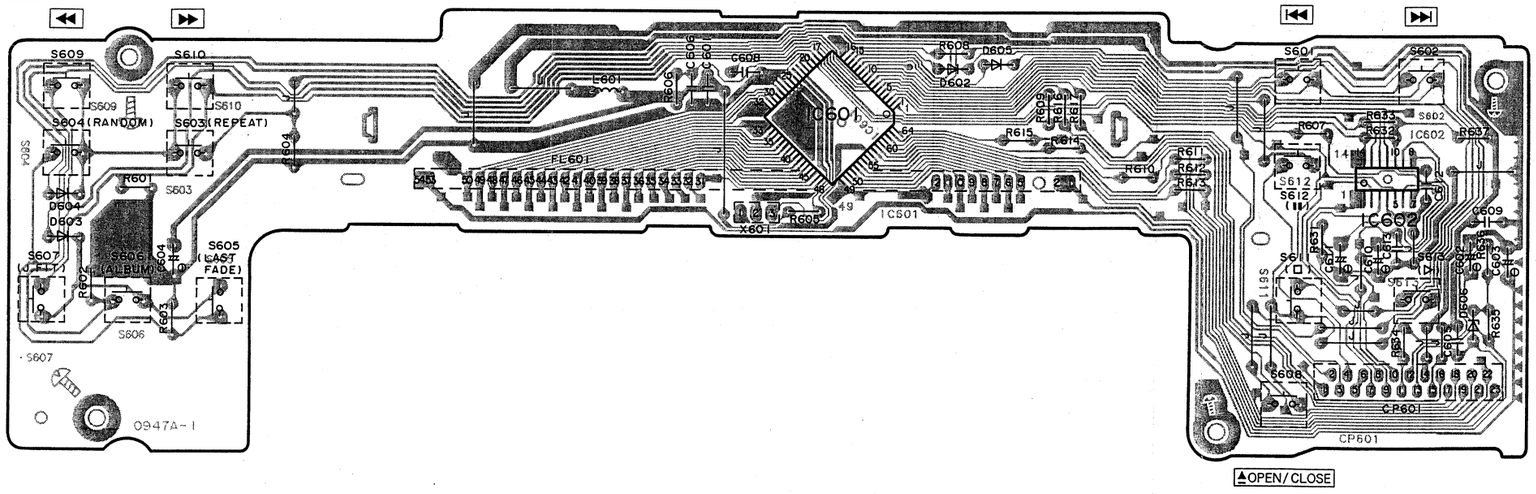


6 7 8 9 10 11 12 13 14

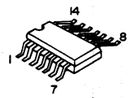
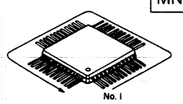
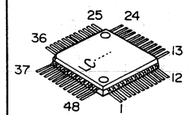
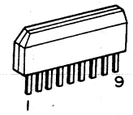
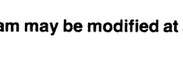
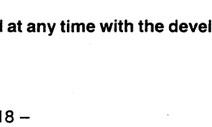
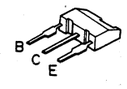
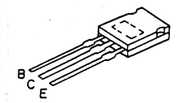
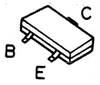
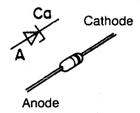
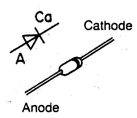
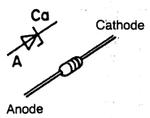
D MAIN P.C.B. (REPI446A-M)



B OPERATION P.C.B. (REPI479A-S)

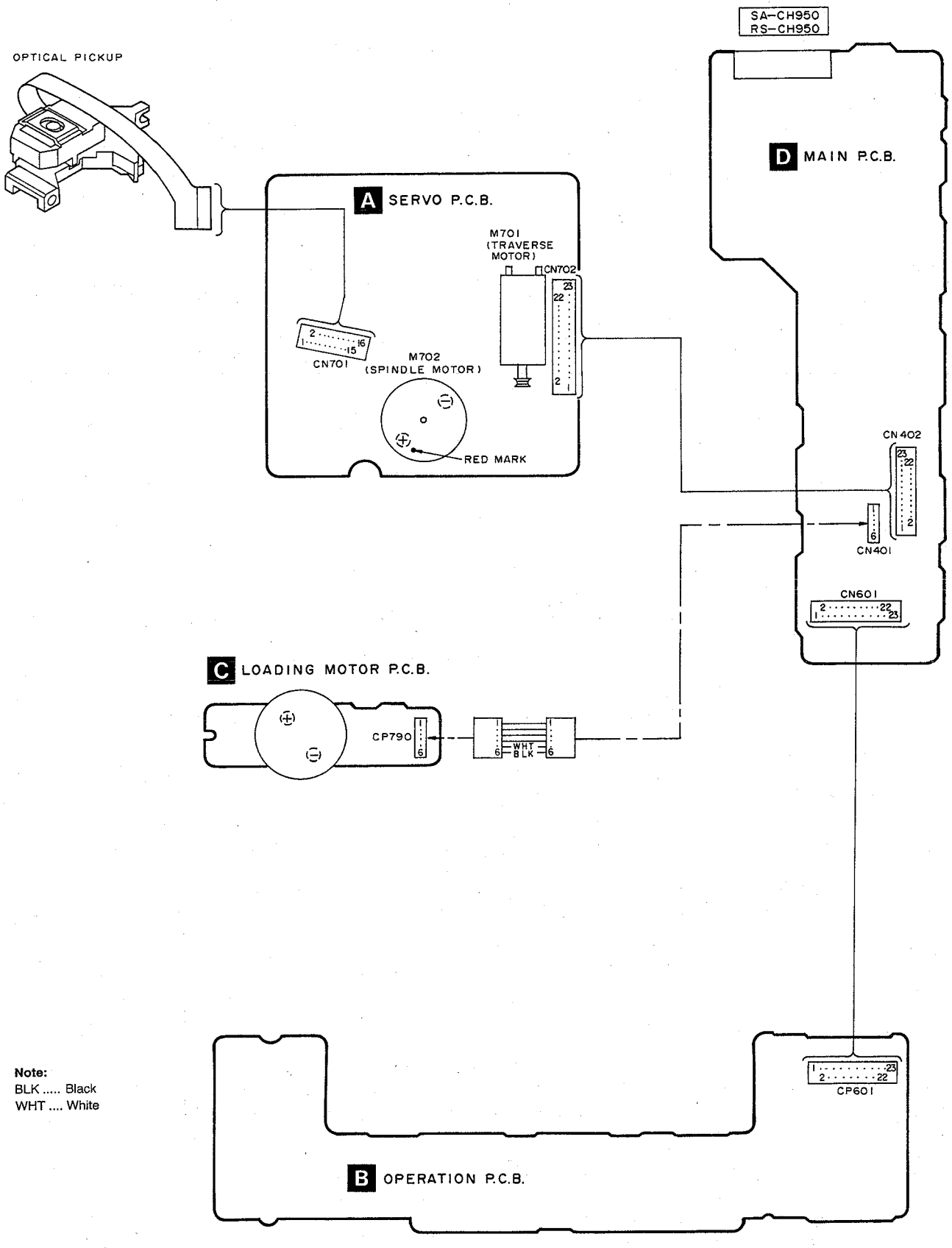


•Terminal guide of IC's, transistors and diodes

BA4558FT1	TC4066BFTP1 	LA5608M-TE-L 14Pin AN8802SCE1V 32Pin	
	M38112M4100F 64Pin MN66271 80Pin	LC66304A4935 	TA7291S 
LM2940T5M 	AN8389SE1 		2SA1309AQSTA 2SC3311AQSTA UN4112TA
2SB1238QSTV6 	2SD2037EFTA 	2SB709STW 	MA4300MTA 
	MA165TA MA167TA MA185TA 1SR35200TB		MA4051MTA MA4056MTA MA4075MTA MA4082LTA

•This circuit board diagram may be modified at any time with the development of new technology.

■ WIRING CONNECTION DIAGRAM



Note:
BLK ..... Black
WHT .... White

■ MEASUREMENTS AND ADJUSTMENTS

Caution:
- It is very dangerous to look at or touch the laser beam. (Laser radiation is invisible.)
  With the unit turned "on", laser radiation is emitted from the pickup lens.
  Avoid exposure to the laser beam, especially when performing adjustments.

■ This unit (SL-CH950) is actuated by power supply form the tuner amplifier SA-CH950.
If you wish to actuate this unit without using the tuner amplifier SA-CH950 for checking or repairing, follow below procedure.
- **Apply AC 10 V between AC (J1)–CT (J3)–AC (J2).**

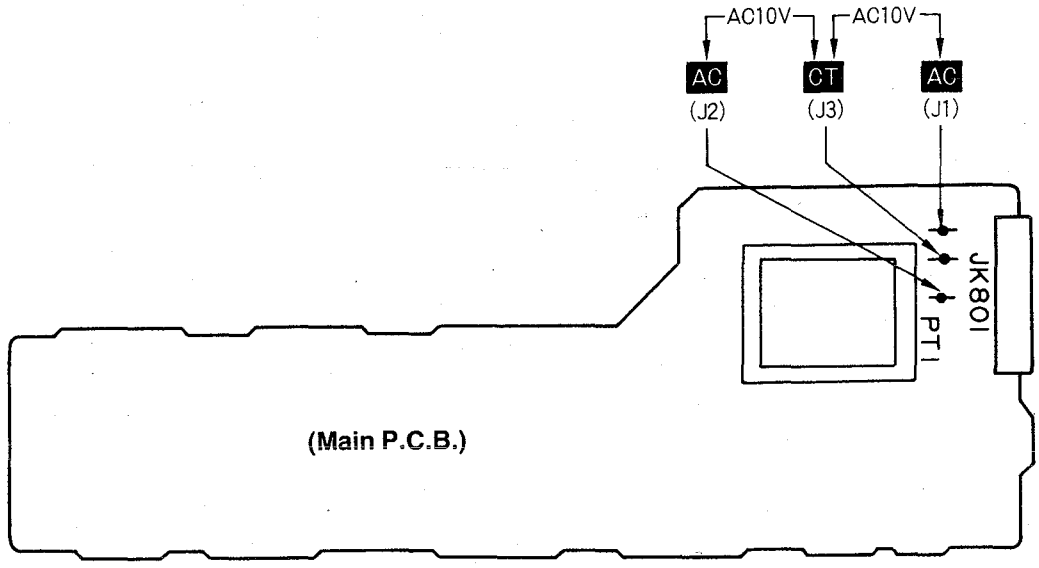


Fig. 1

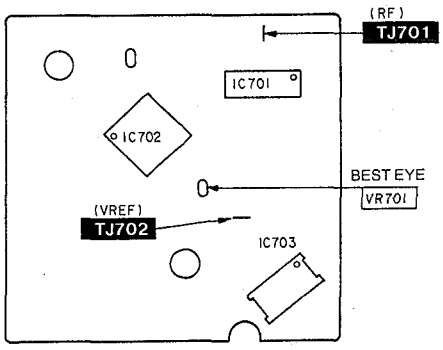


Fig. 2

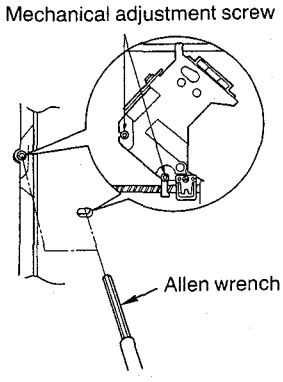


Fig. 3

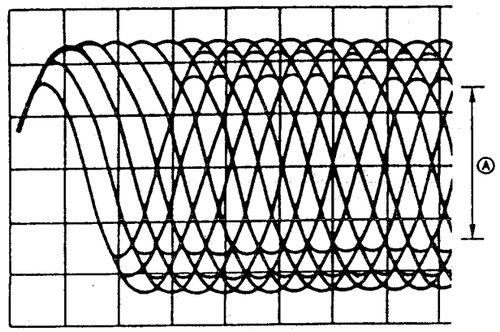
Measuring Instruments and Special Tools

- Test disc
  1. Playability test disc (SZZP1054C)
  2. Uneven test disc (SZZP1056C)
- Allen wrench (M2.0) (SZZP1101C)
- Oscilloscope

(1) MECHANICAL ADJUSTMENT

- When the traverse deck is replaced, making adjustments is not necessary. (The traverse deck ass'y is already adjusted.)
- Make adjustments to improve playability when the traverse deck has not been replaced. Make the electrical adjustments first.

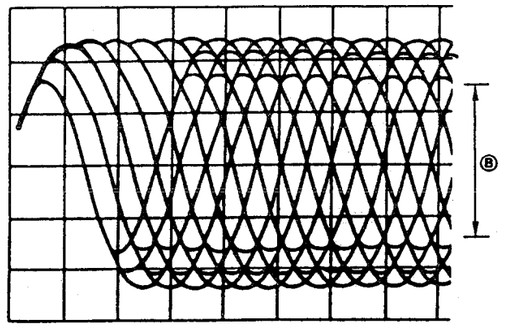
1. Connect the oscilloscope's CH. 1 probe across **TJ701** (+) and **TJ702** (VREF) on the Servo P.C.B.
   Oscilloscope setting:
   VOLT ..... 200 mV
   SWEEP ..... 0.5 µsec
   Input coupling ..... AC
2. Switch the player power **ON**, and play track **19** on the test disc (SZZP1056C).
3. Leave the player in Play mode and place it as shown in the figure on the right.
4. Alternately adjust the two mechanical adjusting screws with the 2.0 mm allen wrench (SZZP1101C) until the RF signal amplitude on the oscilloscope is maximize. (Shown in Fig. 3)
5. After completing the adjustment, lock the **mechanical adjustments** with lock paint (RZZ0L01).



Ⓐ **Maximize the amplitude.**

(2) BEST EYE (PD BALANCE) ADJUSTMENT

1. Connect the oscilloscope's CH. 1 probe across **TJ701** (+) and **TJ702** (VREF) on the Servo P.C.B.
   Oscilloscope setting:
   VOLT ..... 200 mV
   SWEEP ..... 0.5 µsec
   Input coupling ..... AC
2. Switch the player power **ON**, and play the 1 kHz (track 1) on test disc (SZZP1054C).
3. Adjust **VR701 until the RF signal eye pattern amplitude is maximized.** (Shown in Fig. 2)



Ⓑ **Maximize the amplitude.**

(3) CHECK OF PLAY OPERATION AFTER ADJUSTMENT

•Checking Skip Search

1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

•Checking Manual Search

1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

•Checking Playability

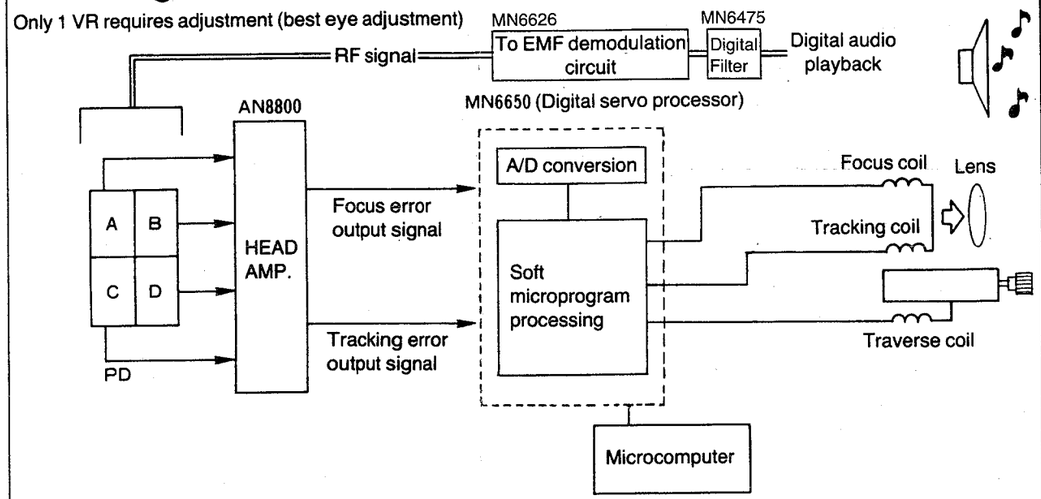
1. Play the 0.7 mm black dot and the 0.7 mm wedge on the test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc and verify that no sound skip or noise occurs.

■ NEW DIGITAL SERVO CIRCUIT

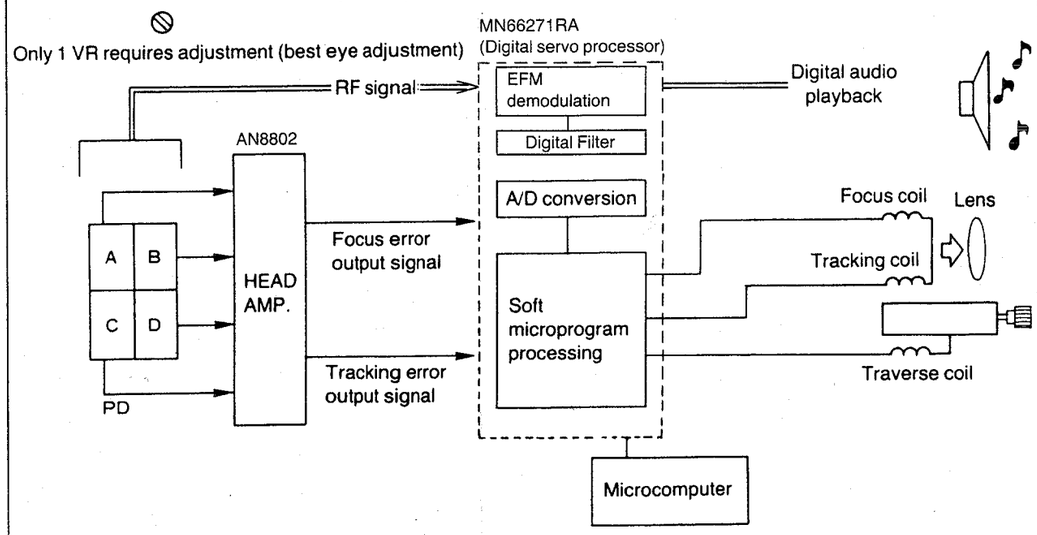
This model employs a new digital servo circuit. Compared to the old digital servo circuit, the following points have been improved.

1. **Reduced operated noise**
   Loading mechanism 2-level speed reducer
2. **Reduced access time**
   [(old) 2.9 seconds→(new) 1.9 seconds]
   Change of traverse gear
3. **Improved vibration resistance**
   Rubber and spring 2-level floating mechanism
   [fo=50 Hz (old)→20 Hz (new)]
4. **Reduced number of parts**
   Use of a single super IC tip
   3 chips (MN6626, MN6650, MN6475) are reduced to a single chip (MN66271RA)

DIGITAL SERVO SYSTEM (OLD)

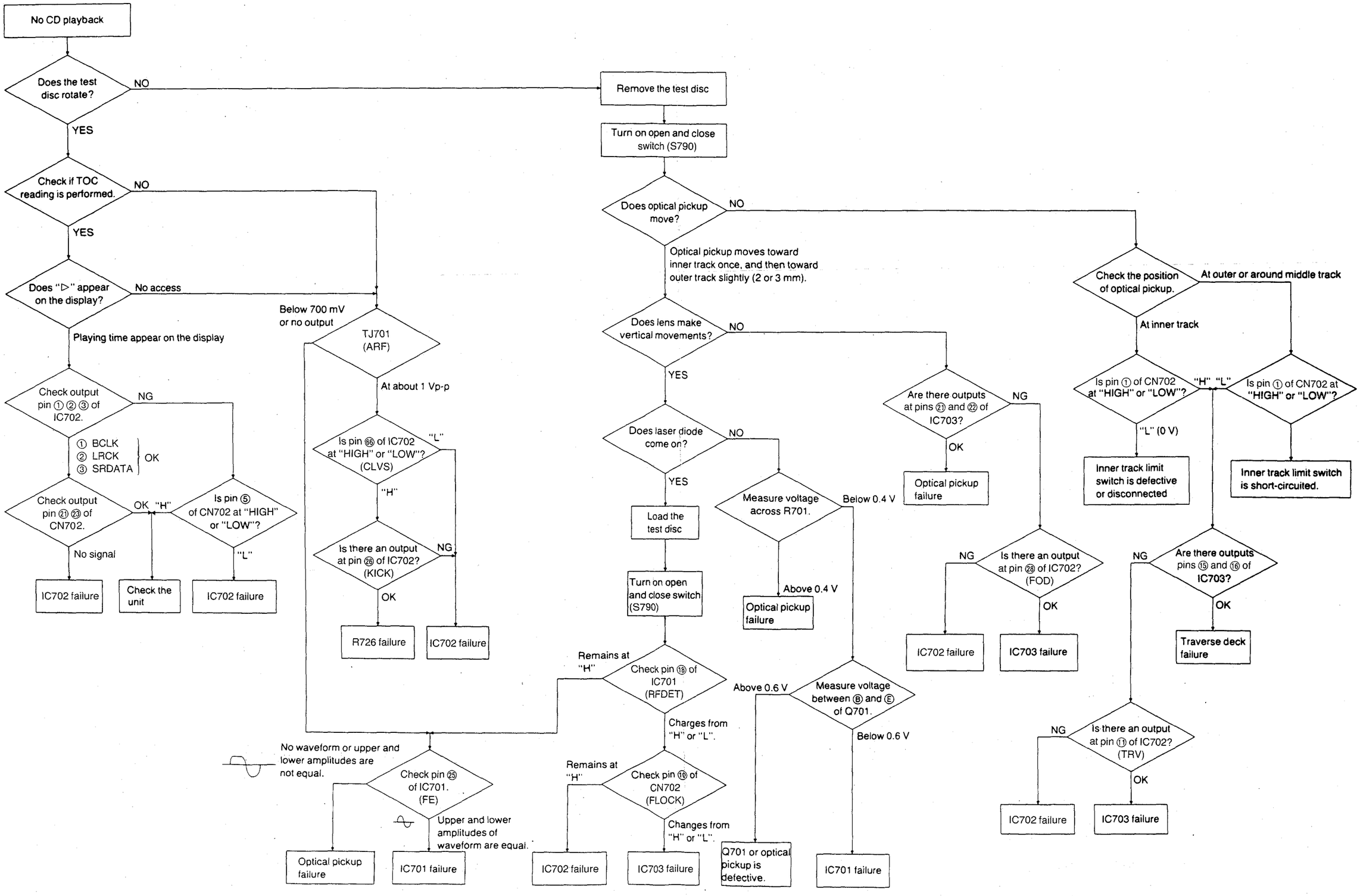


DIGITAL SERVO SYSTEM (NEW)



•Refer to the service manual for Model No. SL-CH7 (Order No. AD9104084C8) for information on "DIGITAL SERVO SYSTEM" and "CHECKING THE OPERATION PROBLEMS ON THE TRAVERSE DECK (OPTICAL PICKUP)".

■ TROUBLESHOOTING GUIDE



■ FUNCTION OF IC TERMINALS

●IC401 (LC66304A4935)

Pin No.	Pin Function	I/O	Description
1	REST SW	I	Innermost track sense switch status
2	SERVO RST	I	Reset signal input
3	STAT	I	Status signal input
4	SUBQ	I	Subcode Q input
5	D MUTE	O	Muting signal output
6	NC	—	———
7	SQCK	O	External clock for subcode Q register
8	BLKCK	I	Subcode block clock input
9	MLD	O	Microprocessor command load signal
10	MDATA	O	Microprocessor command data
11	MCLK	O	Microprocesser command clock
12	NU	—	Tied high
13	/RECV	I	Send enable
14	/SEND	I	Receive enable
15	TEST	—	GND
16	V_{SS}		
17	OSC1	I	Clock input from IC702
18	NC	—	GND
19	NC	—	Tied high
20	OSC2	—	———
21	/RST	O	Reset signal output
22	ACK	I	Acknowledge input for communication with IC601
23	CLK	I	Clock for communication with IC601

Pin No.	Pin Function	I/O	Description
24	DATA0	I	Parallel 4-bit data from IC601
25	DATA1		
26	DATA2		
27	DATA3		
28	NU	—	GND
29			
30	NC	—	Tied high
31	EMP	—	———
32	MUTE RELAY	—	———
33	NU	—	GND
34			
35			
36	CS	—	———
37	NU	—	GND
38			
39	V_{DD}	I	Power supply
40	OPEN SW	I	Disc tray "open" sense switch status
41	CLOSE SW	I	Disc tray "close" sense switch status
42	NC	—	GND
43			
44	/CLOSE	O	Close Disc Tray command output
45	/OPEN	O	Open Disc Tray command output
46	SENSE	I	Sense signal input
47	/FLOCK	I	Focus servo pull-in signal
48	/TLOCK	I	Tracking servo pull-in signal

●IC601 (M38112M4100F)

Pin No.	Pin Function	I/O	Description
1	/SEND	O	Send enable for communication with IC401
2	/RECV	O	Receive enable for communication with IC401
3	BSDTO	O	Bus data output
4	BSCKO	O	Bus clock output
5	BSDTI	I	Bus data input
6	BSCKI	I	Bus clock input
7	KIN3	I	Key matrix input
8	KIN2		
9	KIN1		
10	KIN0		
11	NU	—	———
12	KS3	O	Key scan strobe outputs
13	KS2		
14	KS1		
15	KS0		
16	/CD	O	CD muting signal output
17	CD POWER	I	CD drive power supply control input
18	HALT	I	Power failure sense signal input
19	RST	I	Reset signal input
20	XCIN	—	GND
21	XC OUT	—	———

Pin No.	Pin Function	I/O	Description
22	XIN	I	Crystal oscillator terminal
23	XOUT	O	Crystal oscillator terminal
24	GND	—	GND
25	NU	—	GND
26			
27			
28			
29	NU1	O	———
30	NU2		
31 ≀ 40	G1 ≀ G10	O	FL grid drive signal output
41 ≀ 56	S16 ≀ S1	O	FL segment drive signal output
57	V_{DD}	I	Power supply
58	VP	I	FL pull-down power supply
59	DATA3	O	Data output from IC401
60	DATA2		
61	DATA1		
62	DATA0		
63	CLK	O	Clock for communication with IC401
64	ACK	O	Acknowledge output for communication with IC401

●IC703 (AN8389SE1)

Pin No.	Terminal Name	I/O	Function
1	Vcc	I	Power supply
2	VREF	I	VREF input
3	IN4	I	Motor driver (4) input
4	IN3	I	Motor driver (3) input
5	GND	—	Ground connection
6	NC	—	No connection
7	NRESET	I	Reset input
8	GND	—	Ground connection
9	IN2	I	Motor driver (2) input
10	PC2	I	PC2 (power cut) input
11	IN1	I	Motor driver (1) input
12	PC1	I	PC1 (power cut) input (no use, open)

Pin No.	Terminal Name	I/O	Function
13	PVcc1	I	Power supply (1) for driver
14	PGND1	—	Ground connection (1) for driver
15	D1–	O	Motor driver (1) reverse-action output
16	D1+	O	Motor driver (1) forward-action output
17	D2–	O	Motor driver (2) reverse-action output
18	D2+	O	Motor driver (2) forward-action output
19	D3–	O	Motor driver (3) reverse-action output
20	D3+	O	Motor driver (3) forward-action output
21	D4–	O	Motor driver (4) reverse-action output
22	D4+	O	Motor driver (4) forward-action output
23	PGND2	—	Ground connection (2) for driver
24	PVcc2	I	Power supply (2) for driver

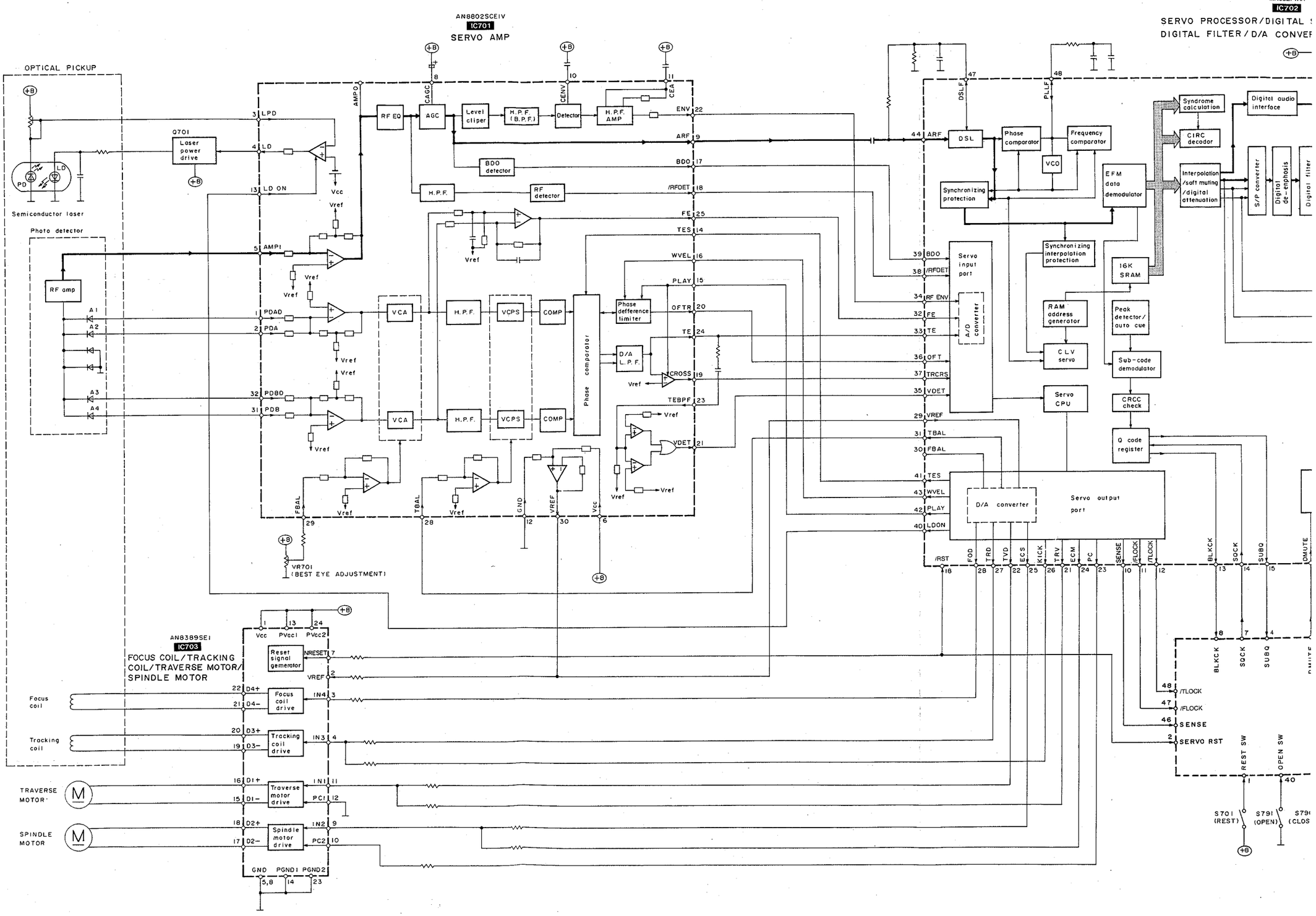
•IC701 (AN8802SCE1V)

Pin No.	Terminal Name	I/O	Function
1	PDAD	I	PD A channel signal input with delay
2	PDA	I	PD A channel signal input without delay
3	LPD	I	Laser PD connection
4	LD	O	Power supply for LD driving
5	AMPI	I	RF amplifier input
6	Vcc	I	Power supply connection
7	AMPO	O	RF amplifier output (no use, open)
8	CAGC	I	AGC loop filter connection
9	ARF	O	RF AGC output
10	CENV	I	Capacitor connection for RF detection
11	CEA	I	Capacitor connection for HPF amplifier
12	GND	—	Ground connection
13	LDON	I	ON/OFF input of LD APC ("H": ON, "L": OFF)
14	TES	I	Tracking error shunt signal input ("H": shunt)
15	PLAY	I	Play signal input ("H": PLAY)
16	WVEL	I	WVEL control
17	BDO	O	BDO output
18	/RFDET	O	NRFDET output
19	CROSS	O	CROSS output
20	OFTR	O	OFTR output
21	VDET	O	VDET output
22	ENV	O	ENV output
23	TEBPF	I	Vibration detection input
24	TE	O	Tracking error output
25	FE	O	Focus error output
26	PTO	O	Potentioamplifier output (no use, open)
27	PTI	I	Potentioamplifier inversion input (no use, open)
28	TBAL	I	Tracking balance input
29	FBAL	I	Focus balance input
30	VREF	O	VREF output
31	PDB	I	PD B channel signal input without delay
32	PDBD	I	PD B channel signal input with delay

•IC702 (MN66271RA)

Pin No.	Terminal Name	I/O	Function
1	BCLK	O	Bit clock output for serial data (no used, open)
2	LRCK	O	L/R identification signal output (no use, open)
3	SRDATA	O	Serial data output (no used, open)
4	DVDD1	I	Power supply input (for digital circuit)
5	DVSS1	—	GND (for digital circuit)
6	TX	O	Digital audio interface signal output
7	MCLK	I	Microprocessor command clock signal input (Latches data at first transition)
8	MDATA	I	Microprocessor command data signal input
9	MLD	I	Microprocessor command load signal input
10	SENSE	O	Sence signal output (OFT, FESL, MAGEND, NAJEND, POSAD, SFG)
11	/FLOCK	O	Focus servo feeding signal output ("L": Feed)
12	/TLOCK	O	Tracking servo feeding signal output ("L": Feed)
13	BLKCK	O	Sub-code block clock signal output (fBLKCK=75 Hz during normal playback)
14	SQCK	I	External clock signal input for sub-code Q register
15	SUBQ	O	Sub-code Q code output
16	DMUTE	I	Muting input ("H": Mute)
17	STAT	O	Status signal output (CRC, CUE, CLVS, TTSTVP, FCLV, SQCK)
18	/RST	I	Reset input
19	SMCK	O	1/2-divided clock signal of crystal oscillating at MSEL="H" (fSMCK=8.4672 MHz) 1/4-divided clock signal of crystal oscillating at MSEL="L" (fSMCK=4.2336 MHz)
20	PMCK	O	1/192-divided clock signal of crystal oscillating (fPMCK=88.2 KHz) (no use, open)
21	TRV	O	Traverse forced feed output
22	TVD	O	Traverse drive output
23	PC	O	Spindle motor ON signal output ("L": ON)
24	ECM	O	Spindle motor drive signal output (forced mode output)
25	ECS	O	Spindle motor drive signal output (servo error signal output)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output
29	VREF	I	D/A (drive) output (TVD, ECS, TRD, FOD, FBAL, TBAL) Reference voltage input
30	FBAL	O	Focus balance adjustment output (no use, open)
31	TBAL	O	Tracking balance adjustment output
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF envelope signal input
35	VDET	I	Vibration detection signal input ("H": detection)
36	OFT	I	Off-track signal input ("H": off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal input ("L": detection)
39	BDO	I	Dropout signal input ("H": Dropout)
40	LDON	O	Laser on signal output ("H": ON)
41	TES	O	Tracking error shunt signal output ("H": shunt)
42	PLAY	O	Play signal out ("H": PLAY)
43	WVEL	O	Double speed status signal output ("H": Double speed)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias (no use, open)
47	DSLF	I/O	DSL loop filter
48	PLLF	I/O	PLL loop filter
49	VCOF	I/O	VCO loop filter (no use, open)
50	AVDD2	I	Power supply input (for analog circuit)
51	AVSS2	—	GND (for analog circuit)
52	EFM	O	EFM signal output (not use, open)
53	PCK	O	PLL extraction clock output (fPCK=4.321 MHz during normal playback) (no use, open)
54	PDO	O	Phase comparison signal of EFM and PCK signals (no use, open)
55	SUBC	O	Sub-code serial data output (no use, open)
56	SBCK	I	Clock input for sub-code serial data (no use, open)
57	Vss	—	GND
58	X1	I	Crystal oscillating circuit input (f=16.9344 MHz)
59	X2	O	Crystal oscillation circuit output (f=16.9344 MHz)
60	VDD	I	Power supply input (for oscillating circuit)
61	BYTCK	O	Byte clock output (no use, open)
62	/CLDCK	O	Sub-code frame clock signal output (fCLDCK=7.35 kHz during normal playback)
63	FCLK	O	Crystal frame clock signal output (fFCLK=7.35 kHz, double=14.7 kHz)
64	PFLAG	O	Interpolation flag output ("H": Interpolation) (no use, open)
65	FLAG	O	Flage output (no use, open)
66	CLVS	O	Spindle servo phase synchronizing signal output ("H": CLV, "L": rough servo) (no use, open)
67	CRC	O	Sub-code CRC checked output ("H": OK, "L": NG) (no use, open)
68	DEMPH	O	De-emphasis ON signal output ("H": ON) (no use, open)
69	RESY	O	Frame resynchronizing signal output (no use, open)
70	/RST2	I	Reset input through MASH circuit ("L": Reset)
71	/TEST	I	Test input
72	AVDD1	I	Power supply input (for analog circuit)
73	OUTL	O	Left channel audio signal output
74	AVSS1	—	GND
75	OUTR	O	Right channel audio signal output
76	RSEL	I	RF signal polarity assignment input (at "H" level, RSEL="H"; at "L" level, RSEL=L)
77	CSEL	I	Crystal oscillating frequency designation input ("L": 16.9344 MHz, "H": 33/8688 MHz)
78	PSEL	I	Test input (normally, "L") (no use, open)
79	MSEL	I	Output frequency switching for SMCK terminal "H": SMCK=8.4672 MHz "L": SMCK=4.2336 MHz (no use, open)
80	SSEL	I	Output mode switching of SUBQ terminal ("H": Q code buffer mode)

■ BLOCK DIAGRAM



MN66271RA
IC702
'DIGITAL SIGNAL PROCESSOR/
A CONVERTER

BA4558FT1
IC801
L.P. FILTER AMP

TC4066BFTP1
IC802
SWITCHING

JK801
Lch
Rch

LA5608M-TE-L
IC602
BUS LINE DRIVE/RESET/HALT

Q10
Switching control

DATA
CLK
DC.GND
A.GND

Standard Voltage

LRCK
BCLK
SR DATA

X2
X1
X701
Timing generator
SMCK
Microcomputer interface

DMUTE
STAT
MDATA
MCLK
MLD

OSCI
Vdd
/RST
D403
D401
RST
CD POWER
Vss
VP
GND
/CD
X IN
X OUT
BSCK O
BSCK I
BSDT O
BSDT I
HALT

X601

LC66304A4935
IC401
SYSTEM CONTROL

/SEND
/RECV
DATA3
DATA2
DATA1
DATA0
CLK
ACK

M38112M4100F
IC601
SYSTEM CONTROL / FL DRIVE

OPEN SW
CLOSE SW
/OPEN
/CLOSE
S790 (CLOSE)
TA7291S
IC790
MOTOR DRIVE
Vcc
VS
VREF
GND
LOADING MOTOR

KEY MATRIX
S601~613
FL DISPLAY
FL601

D8
D6
D10
D1,2
LM2940T5M
IC1
Regulator
Q3~5, D14, 18
D3,4
Q8, D16
Q9, D17
D5
Q1, D12
D13
PT1
AC
CT
AC

■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
*Warning: This product uses a diode. Refer to caution statements on page 2.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC1	LM2940T5	I. C, REGULATOR	
IC401	LC66304A4935	I. C, SYSTEM CONTROL	
IC601	M38112M4100F	I. C, FL DRIVE/SYSTEM CONT.	
IC602	LA5608M-TE-L	I. C, BUS LINE/HALT/RESET	
IC701	AN8802SCE1V	I. C, SERVO AMP.	
IC702	MN66271RA	I. C, SERVO PROCESSOR	
IC703	AN8389SE1	I. C, MOTOR DRIVE	
IC790	TA7291S	I. C, MOTOR DRIVE	
IC801	SVIBA4558F	I. C, L. P. F.	
IC802	TC4066BFTP1	I. C, SWITCHING	
		TRANSISTOR(S)	
Q1	2SB1238QSTV6	TRANSISTOR	
Q3-5	2SD2037EFTA	TRANSISTOR	
Q8	2SC3311A-Q	TRANSISTOR	
Q9	2SA1309A-R	TRANSISTOR	
Q10	UN4112	TRANSISTOR	
Q701	2SB709S	TRANSISTOR	
		DIODE(S)	
D1, 2	MA167	DIODE	⚠
D3-5	1SR35200TB	DIODE	⚠
D6	MA165	DIODE	
D8	MA165	DIODE	
D10	MA4051MTA	DIODE	
D12	MA4300M	DIODE	
D13	MA185TA	DIODE	⚠
D14	MA4082LTA	DIODE	
D16, 17	MA4056MTA	DIODE	
D18	1SR35200TB	DIODE	
D401	MA165	DIODE	
D403	MA165	DIODE	
D602-605	MA165	DIODE	
D606	MA4075MTA	DIODE	⚠
		COIL(S)	
L3, 4	ELEXT3R3KA9	COIL	
L601	ELEXT100KA9	COIL	
		VARIABLE RESISTOR(S)	
VR701	EVNDXAA00B14	V. R, BEST EYE ADJ.	
		OSCILLATOR(S)	
X601	RSXY4M23M01T	OSCILLATOR(4. 23MHz)	

Ref. No.	Part No.	Part Name & Description	Remarks
X701	RSXZ16M9M02T	OSCILLATOR(16. 9344MHz)	
		DISPLAY(S)	
FL601	RSL0135-F	FL DISPLAY	⚠
		SWITCH(ES)	
S601	EVQ21405R	SW, R. SKIP	
S602	EVQ21405R	SW, F. SKIP	
S603	EVQ21405R	SW, REPEAT	
S604	EVQ21405R	SW, RANDOM	
S605	EVQ21405R	SW, LAST FADE	
S606	EVQ21405R	SW, ALBUM	
S607	EVQ21405R	SW, JUST FIT	
S608	EVQ21405R	SW, OPEN/CLOSE	
S609	EVQ21405R	SW, R. SEARCH	
S610	EVQ21405R	SW, F. SEARCH	
S611	EVQ21405R	SW, STOP	
S612	EVQ21405R	SW, PAUSE	
S613	EVQ21405R	SW, PLAY	
S701	RSM0006-P	SW, REST	
S790	RSH1A005	SW, LOADING CLOSE DETECT	
S791	RSH1A005	SW, LOADING OPEN DETECT	
		CONNECTOR(S)	
CN401	RJT029W06VT	CONNECTOR(6P)	
CN402	RJS1A6823	SOCKET(23P)	
CN601	RJS1A6823	SOCKET(23P)	
CN701	RJU035T016-1	SOCKET(16P)	
CN702	RJS1A6723-1Q	SOCKET(23P)	
CP601	RJS1A6723-Q	SOCKET(23P)	
CP790	RJP6G17ZA	CONNECTOR(6P)	
JK801	RJT065K15	CONNECTOR(15P)	
		EARTH TERMINAL(S)	
E1	SNE1004-1	GND PLATE	
		TRANSFORMER(S)	
PT1	RTP114G003	POWER TRANSFORMER	⚠
		TEST JUMPER(S)	
TJ701	RRJ8GET001H	TEST JUMPER	
TJ702	RRJ8GET001H	TEST JUMPER	

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads(pF) F=Farads(F)
* Resistance values are in ohms, unless specified otherwise, 1K=1, 000(OHM) , 1M=1, 000k(OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R1, 2	ERDS2TJ562	1/4W 5. 6K ⚠
R3	ERDS2TJ472	1/4W 4. 7K
R5	ERQ16NKWR15E	1W 0. 15
R7	ERDS2TJ562	1/4W 5. 6K
R8	ERDS2TJ8R2T	1/4W 8. 2 ⚠
R9	ERDS2TJ6R8	1/4W 6. 8 ⚠
R11	ERDS2TJ1R2	1/4W 1. 2
R12	ERDS1FVJ271T	1/2W 270 ⚠
R13	ERD2FCVJ6R8T	1/4W 6. 8 ⚠
R19	ERDS2TJ332	1/4W 3. 3K
R20	ERD2FCVJ6R8T	1/4W 6. 8 ⚠
R21	ERDS2TJ103	1/4W 10K
R22	ERDS2TJ332	1/4W 3. 3K
R23	ERDS2EJ121	1/4W 120
R24	ERDS2TJ471	1/4W 470
R26, 27	ERDS2TJ1R2	1/4W 1. 2
R401-409	ERDS2TJ472	1/4W 4. 7K
R410, 414	ERDS2TJ102	1/4W 1K
R411	ERDS2TJ472	1/4W 4. 7K
R412, 413	ERDS2TJ103	1/4W 10K
R415	ERDS2TJ560T	1/4W 56
R416, 606	ERDS2TJ104	1/4W 100K
R419	ERDS2TJ472	1/4W 4. 7K
R601-604	ERDS2TJ473	1/4W 47K
R605	ERDS2TJ102	1/4W 1K
R607	ERDS2TJ103	1/4W 10K
R608, 609	ERDS2TJ102	1/4W 1K
R610-617	ERDS2TJ221	1/4W 220
R631	ERDS2TJ101	1/4W 100
R632, 633	ERDS2TJ472	1/4W 4. 7K
R634	ERDS2TJ8R2T	1/4W 8. 2 ⚠
R635, 636	ERDS2EJ121	1/4W 120 ⚠
R637	ERDS2TJ470	1/4W 47
R701	ERJ6GEYJ100	1/10W 10
R702	ERJ6GEYJ471V	1/10W 470
R703	ERJ6GEYJ823	1/10W 82K
R704, 706	ERJ6GEYJ102A	1/10W 1K
R705	ERJ6GEYJ103V	1/10W 10K
R707	ERJ6GEYJ473V	1/10W 47K
R708	ERJ6GEYJ224V	1/10W 220K
R709	ERJ6GEYJ683V	1/10W 68K
R711	ERJ6GEYJ154V	1/10W 150K
R712	ERJ6GEYJ471V	1/10W 470
R714	ERJ6GEY0R00A	1/10W 0. 00
R717-720	ERJ6GEYJ102A	1/10W 1K
R721	ERJ8GEYJ101V	1/8W 100
R722	ERJ6GEYJ473V	1/10W 47K

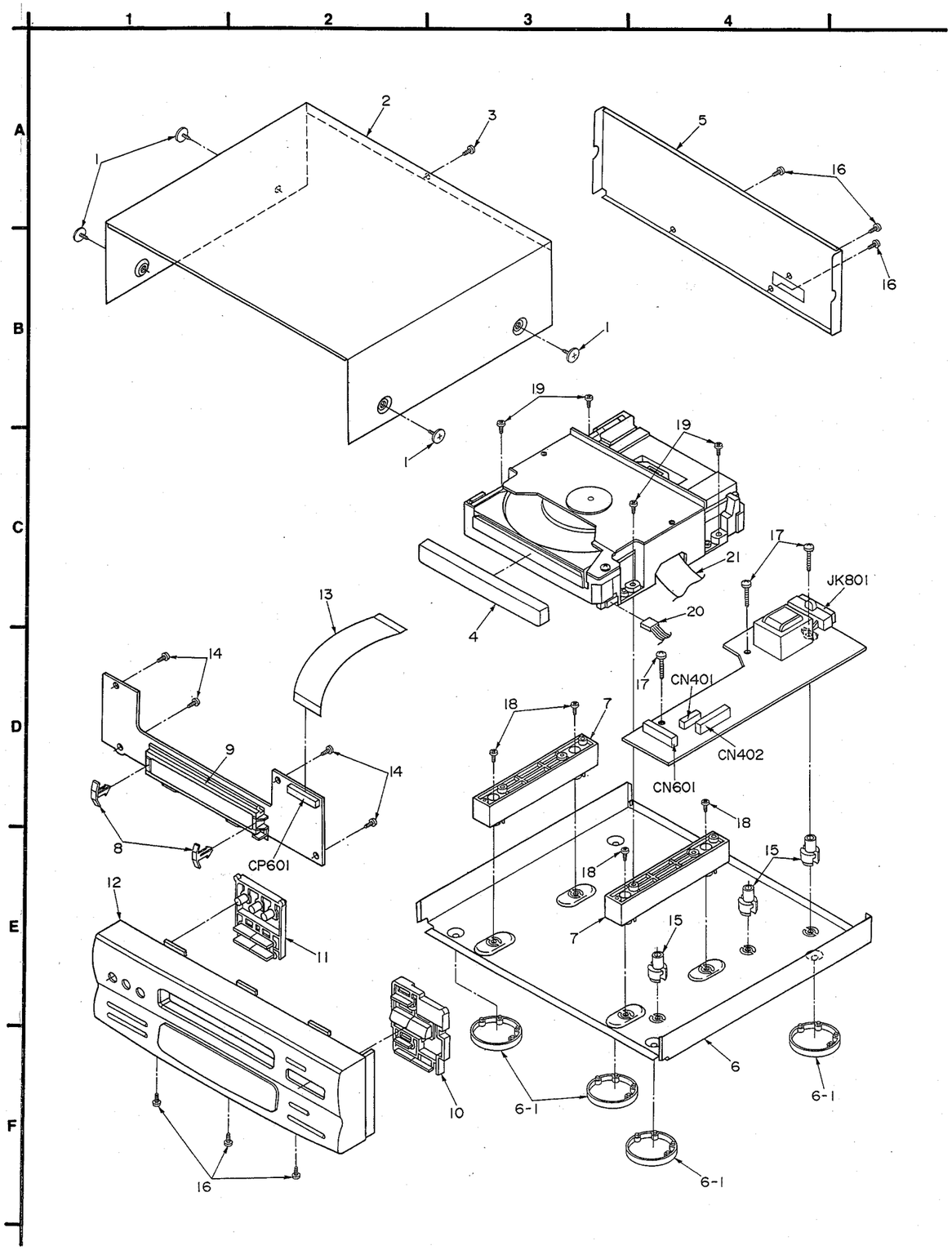
Ref. No.	Part No.	Values & Remarks
R723	ERJ6GEYJ182V	1/10W 1. 8K
R724	ERJ6GEYJ333V	1/10W 33K
R725	ERJ6GEYJ472V	1/10W 4. 7K
R726	ERJ6GEYJ473V	1/10W 47K
R727	ERJ6GEYJ103V	1/10W 10K
R728	ERJ6GEYJ392V	1/10W 3. 9K
R730	ERJ6GEYJ331V	1/10W 330
R731	ERJ6GEYJ392V	1/10W 3. 9K
R734-736	ERJ6GEYJ101V	1/10W 100
R738	ERJ6GEYJ223V	1/10W 22K
R739	ERJ6GEYJ681V	1/10W 680
R741-743	ERJ6GEYJ562V	1/10W 5. 6K
R744	ERJ6GEYJ103V	1/10W 10K
R745	ERJ6GEYJ155V	1/10W 1. 5M
R746	ERJ8GEYJ103V	1/8W 10K
R747	ERJ6GEYJ473V	1/10W 47K
R801, 802	ERDS2TJ104	1/4W 100K
R803-806	ERDS2TJ223	1/4W 22K
R807, 808	ERDS2TJ273	1/4W 27K
R809, 810	ERDS2TJ332	1/4W 3. 3K
R811-814	ERDS2TJ104	1/4W 100K
R815, 816	ERDS2TJ102	1/4W 1K
		CHIP JUMPERS
RJ701-717	ERJ8GEY0R00A	1/10W 0
RJ721, 722	ERJ8GEY0R00A	1/10W 0
RJ724-726	ERJ8GEY0R00A	1/10W 0
		CAPACITORS
C1	ECA1CM222B	16V 2200U
C2	ECA1EM101B	25V 100U
C3, 4	ECBT1E103ZF	25V 0. 01U ⚠
C5	ECBT1H102KB5	50V 1000P
C6	ECA1HM101B	50V 100U
C7	ECKR2H102ZF5	500V 1000P ⚠
C8	ECEA0JKA221B	6. 3V 220U
C10	ECEA1AKA221Q	10V 220U
C11	ECBT1H102KB5	50V 1000P
C12	ECEA1AKA101B	10V 100U
C16	ECEA0JKA470B	6. 3V 47U
C17	ECBT1H102KB5	50V 1000P
C18-20	ECEA0JKA470B	6. 3V 47U
C21	ECBT1H102KB5	50V 1000P
C401	ECBT1H104ZF5	50V 0. 1U
C402, 403	ECBT1H102KB5	50V 1000P
C404	ECBT1E103ZF	25V 0. 01U
C405	ECBT1H102KB5	50V 1000P
C406	ECBT1E103ZF	25V 0. 01U
C601	ECBT1H104ZF5	50V 0. 1U

Ref. No.	Part No.	Values & Remarks
C602, 603	ECEA1HKS3R3B	50V 3. 3U ⚠
C604	ECEA0JKS470	6. 3V 47U
C605	ECBT1H102KB5	50V 1000P
C606	ECBT1E103ZF	25V 0. 01U
C608, 609	ECBT1E103ZF	25V 0. 01U
C610	ECEA1HKSR22B	50V 0. 22U
C611	ECEA1HKSR33B	50V 0. 33U
C612	ECBT1E223ZF	25V 0. 022U
C613	ECBT1E103ZF	25V 0. 01U
C701	ECEA0JKA220	6. 3V 22U
C702	ECEA1HKA010I	50V 1U
C703	ECEA0JKA101I	6. 3V 100U
C704	ECUZ1E104MBN	25V 0. 1U
C705	ECEA1HKA010I	50V 1U
C706	ECUE1H101JCN	50V 100P
C708	ECUE1H472KBN	50V 4700P
C709	ECUE1C473KBN	16V 0. 047U
C710	ECUE1H152KBN	50V 1500P
C711, 712	ECUZ1E104MBN	25V 0. 1U
C713	ECUV1C104MBM	16V 0. 1U
C714	ECEA0JKA101I	6. 3V 100U
C715	ECEA0JKA470I	6. 3V 47U
C716	ECUE1H561KBN	50V 560P
C717	ECUZ1E104MBN	25V 0. 1U
C718, 719	ECUV1C224KBM	16V 0. 22U
C721, 722	ECUE1H100DCN	50V 10P
C723	ECEA1AKA221I	10V 220U
C724	ECUV1C104MBM	16V 0. 1U
C725, 726	ECUE1H102KBN	50V 1000P
C727, 728	ECEA1HKA010I	50V 1U
C730	ECUZ1E104MBN	25V 0. 1U
C731, 732	ECA05SD151I	6. 3V 150U
C733	ECUZ1E104MBN	25V 0. 1U
C734	ECEA1AKA221I	10V 220U
C735-737	ECUZ1E104MBN	25V 0. 1U
C738	ECUV1C154KBN	16V 0. 15U
C742	ECUV1E273KBN	25V 0. 027U
C743	ECUZ1E104MBN	25V 0. 1U
C744	ECUE1E822KBN	25V 8200P
C745	ECUE1C473MBN	16V 0. 047U
C746	ECUE1H050DCN	50V 5P
C747	ECUE1H222KBN	50V 2200P
C748	ECUV1H271KBM	50V 270P
C790	ECA1AKF820E	10V 82U
C801, 802	ECBT1H331KB5	50V 330P
C803, 804	ECBT1H121KB5	50V 120P
C805, 806	ECEA1EKA220B	25V 22U
C807, 808	ECBT1H101KB5	50V 100P

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RHD30007	SCREW	
2	RKM0203-1K	CABINET	
3	XTBS3+8JFZ1	SCREW	
4	RGK0496-K	TRAY PANEL	
5	RGR0146A-G	REAR PANEL	
6	RFKJLCH550PP	BOTTOM BOARD ASS'Y	
6-1	RKA0055-N	FOOT	
7	RMR0343	HOLDER	
8	RMN0195	FL SPACER	
9	RMN0197	FL HOLDER	
10	RGU0801-K	BUTTON, PLAY etc.	
11	RGU0802-K	BUTTON, SEARCH etc.	
12	RFKGLCH950EK	FRONT PANEL ASS'Y	
13	RWJ5423130EE	FLEXIBLE CABLE(23P)	
14	XTBS26+8J	SCREW	
15	SHE185-2	P.C.B. SPACER	
16	XTBS3+8JFZ1	SCREW	
17	XTB3+16JFZ	SCREW	
18	XTB3+8FFZ	SCREW	
19	XTB3+8JFZ	SCREW	
20	REX0354	LEAD CABLE(6P)	
21	REZ0537	FLEXIBLE CABLE(23P)	

Ref. No.	Part No.	Part Name & Description	Remarks
		LOADING PARTS	
101	RFKJLPG440BK	CHASSIS ASS'Y	
101A	RDG0142	LOADING GEAR	
101B	RDG0193	LOADING GEAR(1)	
101C	RDP0041	PULLEY	
102	REM0019	MOTOR ASS'Y	
103	RMA0339	HOLDER	
104	RME0063	LOCK LEVER SPRING	
105	RME0087	SPRING	
106	RMG0158	BELT	
107	RML0177	CONVERSION LEVER	
108	RML0178-1	LOCK LEVER	
109	RMM0059-1	SLIDE PLATE(2)	
110	RMM0079	SLIDE PLATE(1)	
111	XTN26+6G	SCREW	
112	XYN2+F6FZ	SCREW	
113	RDB0036	GUIDE HOLDER	
114	RHD20010	SCREW	
115	RMU0046	GUIDE SHAFT	
116	RHM245ZA	MAGNET	
117	RMA0327-1	DISC CLAMPER	
118	RMR0334	MAGNET HOLDER	
119	RXQ0123	DISC HOLDER	
120	RFKNLPG440-K	DRIVE RACK ASS'Y	
121	RGQ0088-K	DISC TRAY	
122	RHD20009-1	SCREW	
123	XTB3+25GFZ	SCREW	
124	XTN26+6G	SCREW	
125	XTN3+8JFZ	SCREW	
126	RAE0111Z	TRAVERSE UNIT ASS'Y	
126A	SHG0112	RUBBER(A)	
126B	SHG0113-1	RUBBER(B)	
126C	RDV0023	BELT	
126D	SNSD38	SCREW	
127	RME0109	SPRING	
128	RMS0123-1	PIN(A)	
129	RMS0350	PIN(B)	
130	RMR0533-K	TRAVERSE CHASSIS	
131	XTV2+6G	SCREW	

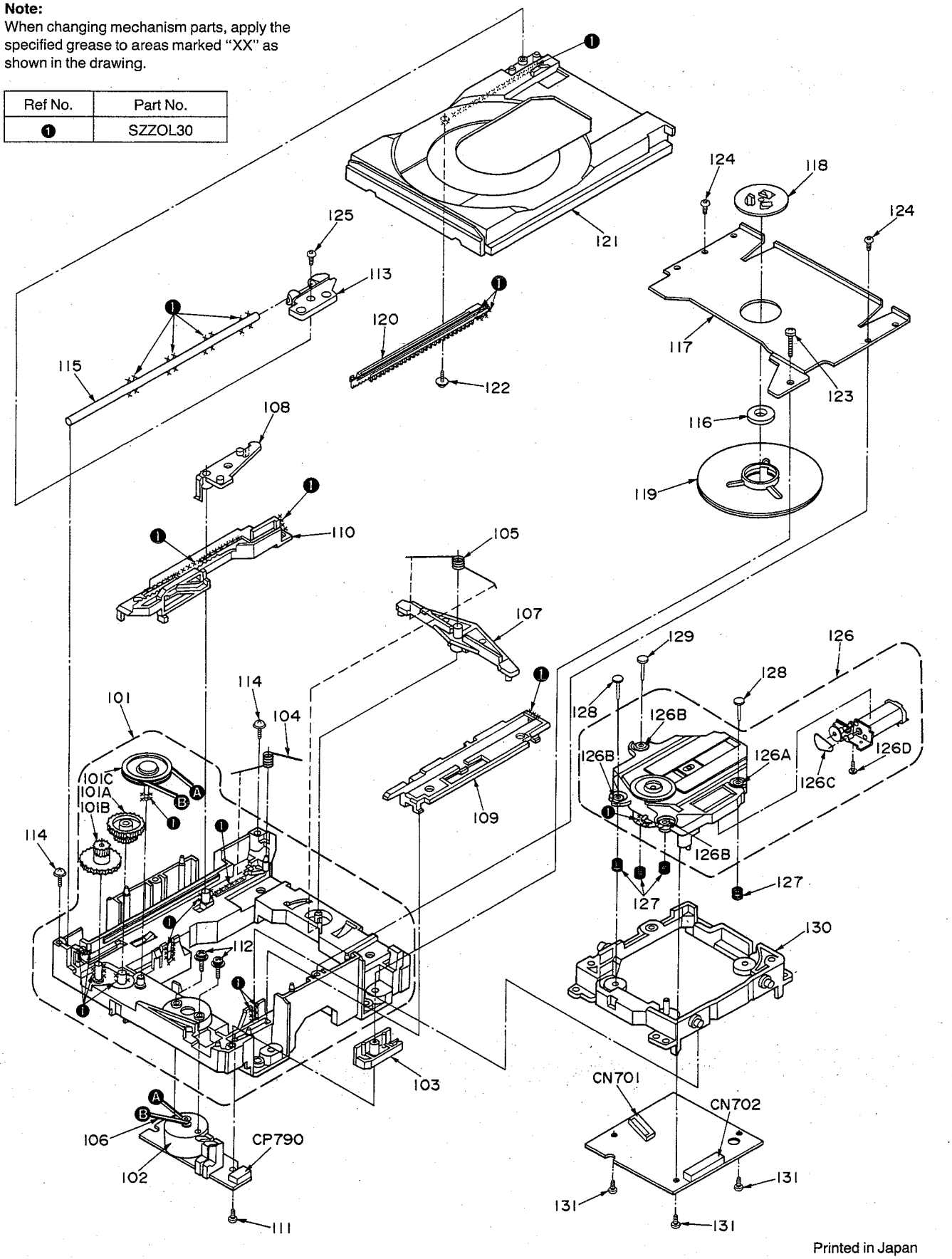
■ CABINET PARTS LOCATION



■ LOADING UNIT PARTS LOCATION

Note:
When changing mechanism parts, apply the specified grease to areas marked "XX" as shown in the drawing.

Ref No.	Part No.
❶	SZZOL30



Printed in Japan
F921212000FF/HH/TN

ORDER NO. AD9411318S8

Service Manual

Supplement

Radio Cassette

Compact Disc Player

SL-CH750
SL-CH950

Please file and use this supplement manual together with the service manual for the below models.

Model No.	Original Service Manual Order No.
SL-CH750 (E)	AD9211377C8
SL-CH950 (E)	AD9211378C8

Colour

(K) : Black

Areas

Suffix for Model No.	Area	Colour
(E)	Europe, Asia, Latin America, Middle East, Africa and Oceania	(K)

Notes: This supplement is intended to provide additional information or corrections to the existing service manual for model No. SL-CH750 or SL-CH950. Be sure to update your service manual for future reference.

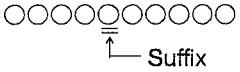
■ MAIN CHANGED POINTS

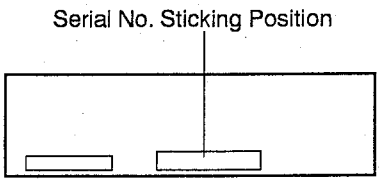
Semi-fixed VR (Used for Best eye (PD balance) adjustment) discontinued in accordance with improvement of servo IC. With the improvement of servo processor IC (IC702), Best eye (PD balance) adjustment is automated and if is no longer necessary to make the adjustment by turning the semi-fixed VR (VR701).
The schematic diagram, printed circuit board diagram and replacement parts list (electrical parts) have been partly changed.

■ SERIAL NUMBER SUFFIX

Of those sets with Serial No. suffix **C** and onward, the conventional CD circuit has been changed to the new one.

Serial number





(Rear view)

⚠WARNING

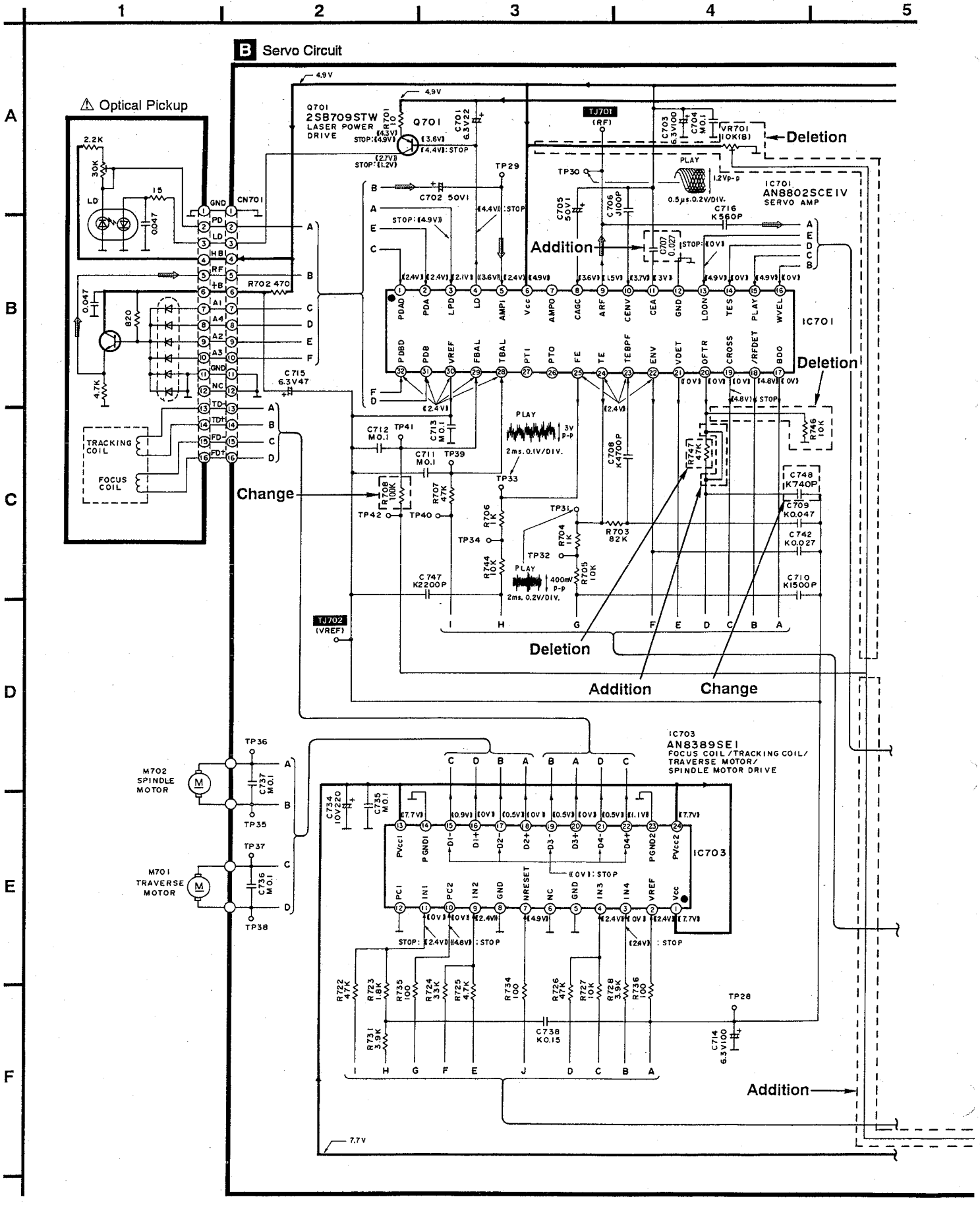
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Technics®

© 1994 Matsushita Electric Industrial Co., Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.

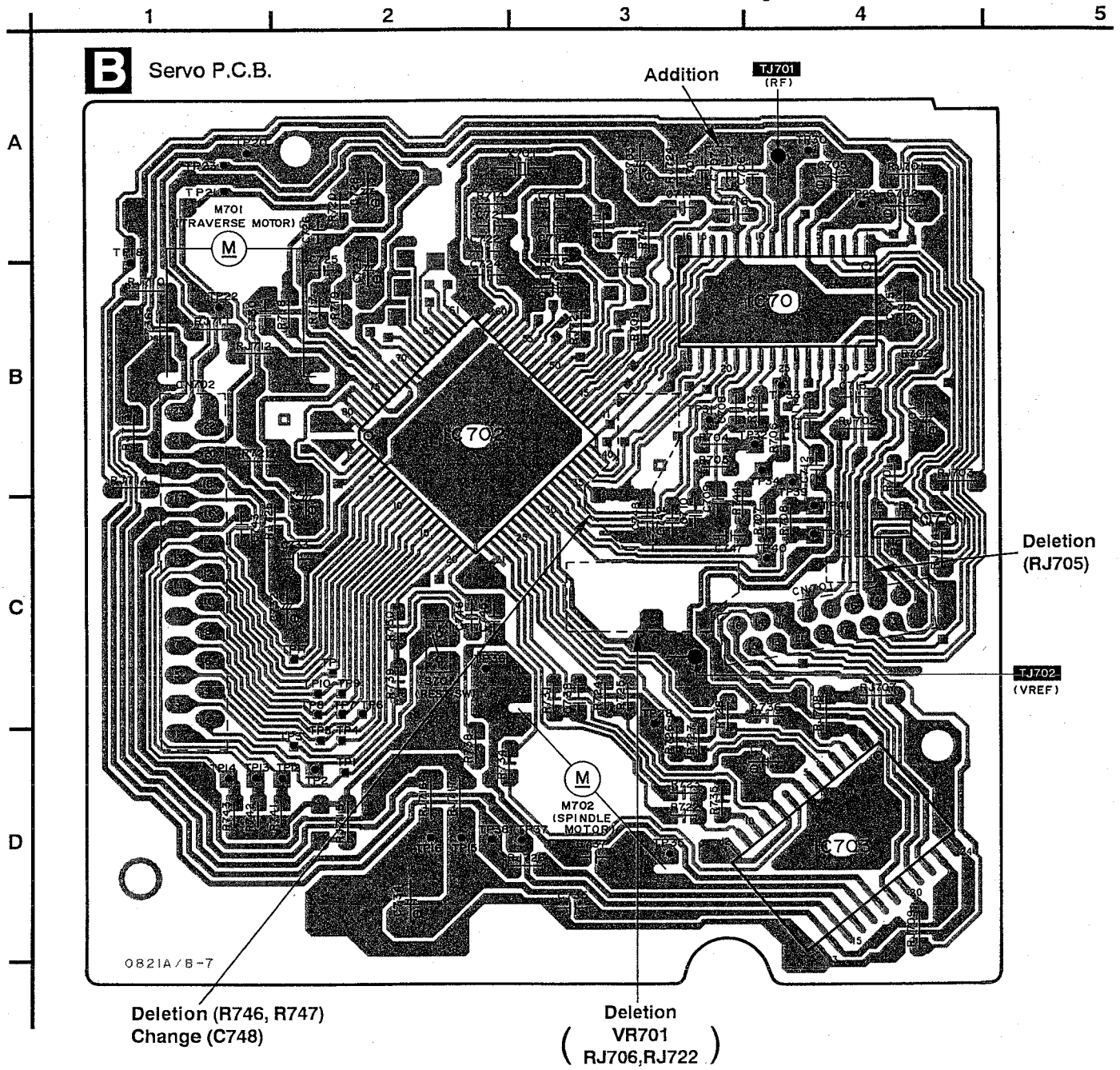
■ SCHEMATIC DIAGRAM

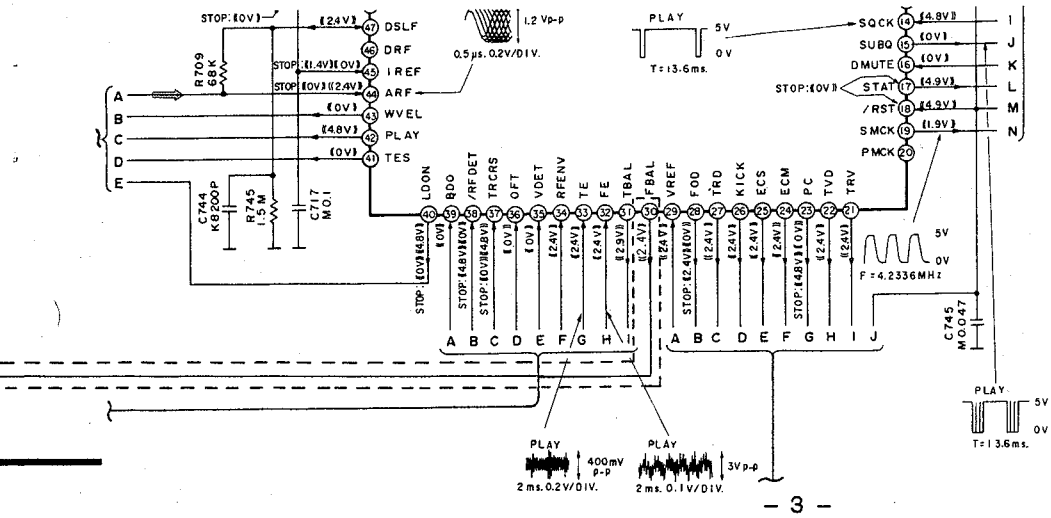
Note : Points changed from the Service Manual SL-CH750 or SL-CH950 are shown.



■ PRINTED CIRCUIT BOARD DIAGRAM

Note: This printed circuit board diagram show a diagram after discontinuation of VR701.





■ CHANGE IN REPLACEMENT PARTS LIST

Note 1 : Points changed from the Service Manual SL-CH750 or SL-CH950 are shown.

Ref. No.	Change of Part Number		Description	Remarks
	Original Service Manual	Supplement Service Manual		
VARIABLE RESISTOR				
VR701	EVNDXAA00B14	————	VR, BEST EYE ADJUSTMENT	Deletion
RESISTORS				
R708	ERJ6GEYJ224V	ERJ6GEYJ104V	1/10 W, 100 kΩ	Change
R746	ERJ6GEYJ103V	————	1/8 W, 10 kΩ	Deletion
R747	ERJ6GEYJ473V	————	1/10 W, 47 kΩ	Deletion
CHIP JUMPERS				
RJ705	ERJ8GEY0R00A	————	CHIP JUMPER	Deletion
RJ706	ERJ8GEY0R00A	————	CHIP JUMPER	Deletion
RJ722	ERJ6GEY0R00A	————	CHIP JUMPER	Deletion
CAPACITORS				
C707	————	ECUV1E273KBN	25V, 0.027 μF	Addition
C748	ECUV1H271KBM	ECUV1H471KBM	50V, 470 pF	Change

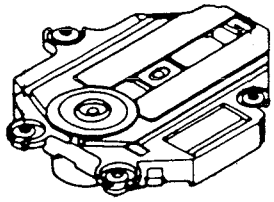
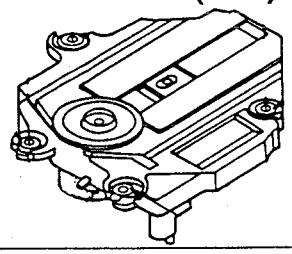
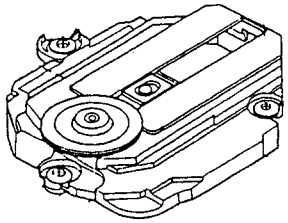
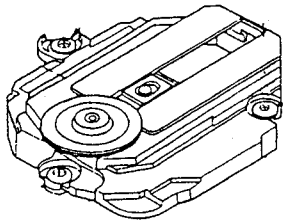
Note 2:
- Even among those sets using MN66271RA, there are some that are equipped with VR701. In this case, the old P.C.B. with its circuit unchanged is used.
- MN66271RA can be used for a set using MN66271, but MN66271 cannot be used for a set using MN66271RA.
- Even though a set using MN66271 is changed for MN66271RA, VR701 cannot be discontinued because of the difference in P.C.B. (circuit) (In this case, VR701 has to be adjusted.)

Printed in Japan
F941112000 HS/KH/HH

ORDER NO. AD9602025T0
A1

Technical Information

Object: Traverse deck assemblies used on CD players manufactured by our company have gone through many changes that would have inconvenienced you greatly in your service activities.
For easy detection of the differences, we suggest you to classify relevant models by the traverse deck assemblies as tabulated below. Please make practical use of the table in your service work.
For detail, please see the next page.

<table>
<tr><th>TRV UNIT ASS'Y</th><th colspan="2">MODEL NO.</th></tr>
<tr><td rowspan="3">SODD110Z (CU1)
  </td><td colspan="2">SA-CH55, SA-HD52, SL-CH700, SL-CH900, SL-E10, SL-PG100, SL-PG300, RX-DT55P</td></tr>
<tr><td colspan="2">(CU1) → (CU2) Midway-changed Model</td></tr>
<tr><td colspan="2">SL-PJ28, SL-PJ38, SA-CH11, SA-CH33, SL-PJ316, SL-E10, RX-DT505, RX-DT707, RX-DT909, RX-DS303, RX-DT610, RX-DT630, RX-DS101, RX-DS202, RX-DT680</td></tr>
<tr><td rowspan="3">AE0111Z (CU2)
  </td><td colspan="2">SA-CH350, SL-CH550, SL-CH750, SL-CH950, SL-PG340, SL-PG440, RX-DT501, RX-DT701, RX-DT670, RX-DS101, RX-DS102, RX-DT401</td></tr>
<tr><td>(CU2C) → (CU3C) Midway-changed Model</td><td>(CU2G) → (CU3G)</td></tr>
<tr><td>SA-CH150, SL-PG340, SL-PG440, SA-DH30, SL-PJ316, SL-DH66, RX-DT501, RX-DT401, RX-DT610, RX-DT630, RX-DT680</td><td>SL-CH505, SL-CH707</td></tr>
<tr><td rowspan="3">RAE0113Z (CU3)
  </td><td colspan="2">SA-CH31, SACH32, SA-CH72, SA-CH73, SA-CH170, SL-CH80, SL-CH90, SL-CH404, SL-CH510G, SL-CH610, SL-CH515, SL-CA1080, SL-CA1060, SL-PJ28, SL-PJ38, SL-PS840, SL-PG350, SL-PG450, SL-VC910, SL-VM500, RX-DS15, RX-DS25, RX-DS35, RX-DT620, RX-DT640, RX-E250, RX-E300, RX-DT650, RX-DT690, RX-DS550</td></tr>
<tr><td colspan="2">(CU3C) → (CU4C) Midway-changed Model</td></tr>
<tr><td colspan="2">SL-CH530</td></tr>
<tr><td>RAE0150Z (CU4)
  </td><td colspan="2">RX-ED70</td></tr>
</table>

Technics®/Panasonic®

rev V 01033

ORDER NO. AD9511259T0
A6

Technical Information

Single CD Loading Unit
<CR2 Series> Disc Tray Disassembly/Reassembly Instructions

Purpose of issuance

- Disc trays are often removed and mounted during repair of CD units. When mounting the disc trays, the servicemen should take meticulous care.
- Disc trays can be classified into 3 types, and each type differs slightly in method of mounting. Please take note of the following instructions that will prove of service in repair work.

Troubles by incorrect mounting of disc tray

- Malfunction of disc tray..... The disc tray opens unexpectedly, opens and closes repeatedly, or fails to close.
- Unusual noise..... The disc tray, when closed, emits continuous clicks.

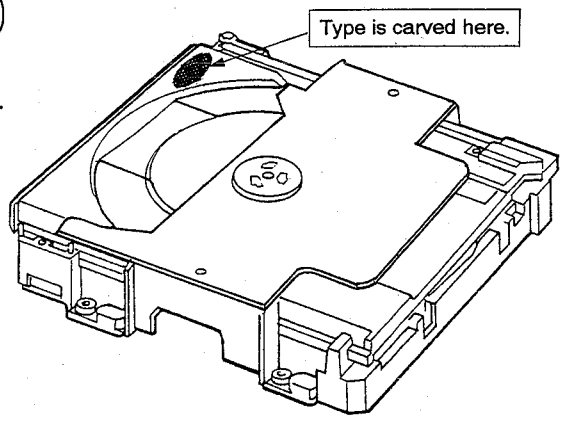
Disc tray types and how to distinguish

<Types>

- There are 3 types of disc trays: CR2, CR2NL, and CR2NS. (Their replacement part numbers differ accordingly.)

<How to distinguish>

- Type is carved on the ⬬ section of each disc tray.



Disc tray types and applicable models

Disc Tray		Applicable Models (as of October, 1995)
Type	Part No.	
CR2	RGQ0088-K	RX-DT701, SA-CH150, SA-CH31, SA-CH350, SL-CH40, SL-CH505, SL-CH505, SL-CH51, SL-CH550, SL-CH707, SL-CH750, SL-CH950, SL-DH30, SL-PG340, SL-PG440, SL-PJ28, SL-PJ316
	RGQ0088-K1	RX-DT75, SA-CH303, SL-CH1060, SL-CH170, SL-CH510, SL-CH909, SL-PG350※1, SL-PG450※1, SL-PJ38
CR2NL	RGQ0144-K	RX-ED90, SA-CH32, SL-CH530, SL-PG350※2, SL-PG450※2
CR2NS	RGQ0143-K	RX-DS05, RX-DT07, RX-ED70

※1 = for P/PC only ※2 = for GC/GN only

Panasonic®/Technics®

Disassembly

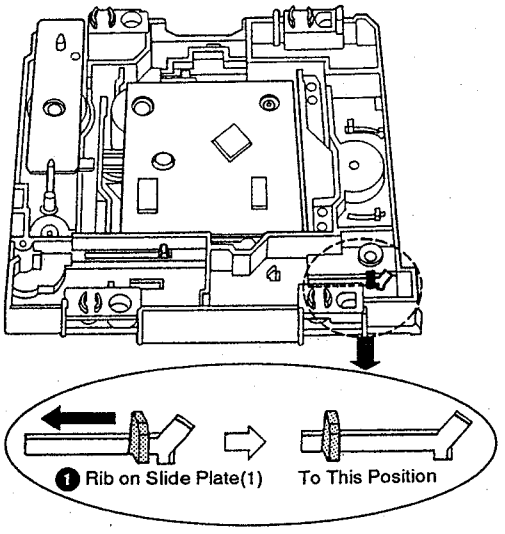
<Procedure>

❶ Move the traverse deck down.
↓
❷ Pull out the disc tray.
↓
❸ Remove the clamp plate.
↓
❹ Remove the disc tray.

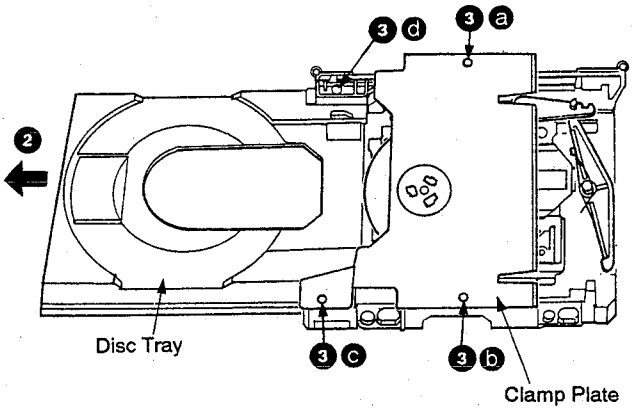
<Instructive Points>

CR2	CR2NL	CR2NS
Move the rib on the slide plate (1). (see Bottom View)		
Pull out to the left end.		
4 screws (including 1 guide shaft holder screw)	2 screws	
Raise the guide shaft holder.	Pressing the lock piece, release lock from the stopper.	

(BOTTOM VIEW)

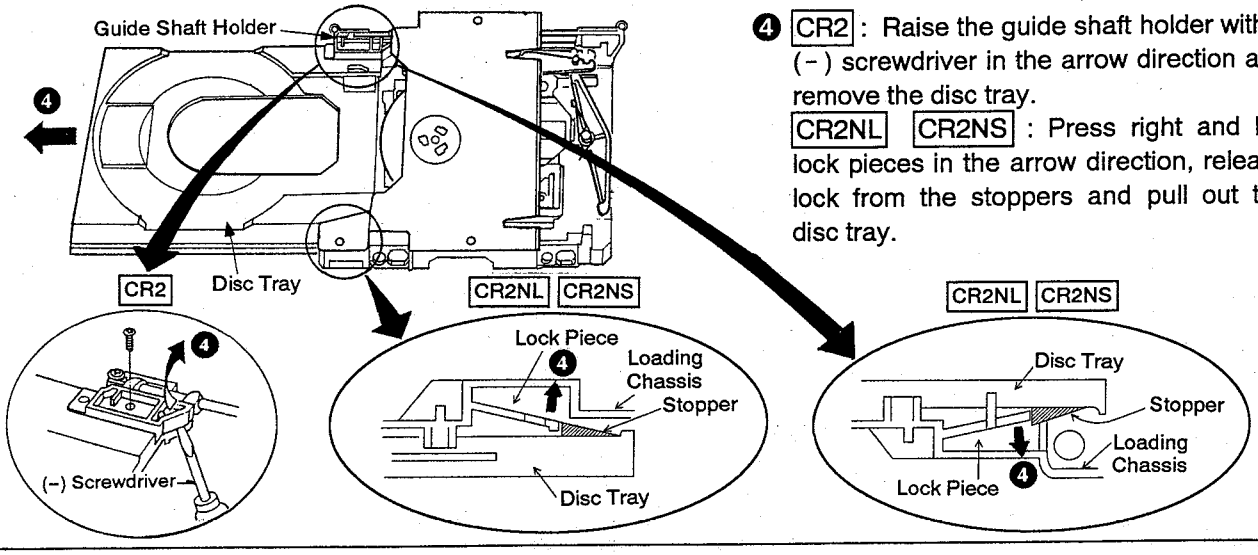


❶ CR2 CR2NL CR2NS : Slide the rib (oblique-lined part) on the slide plate (1) to the left (in the arrow direction) till a click is heard.
⇩
The traverse deck moves down.



❷ CR2 CR2NL CR2NS : Pull out the disc tray to the left end.

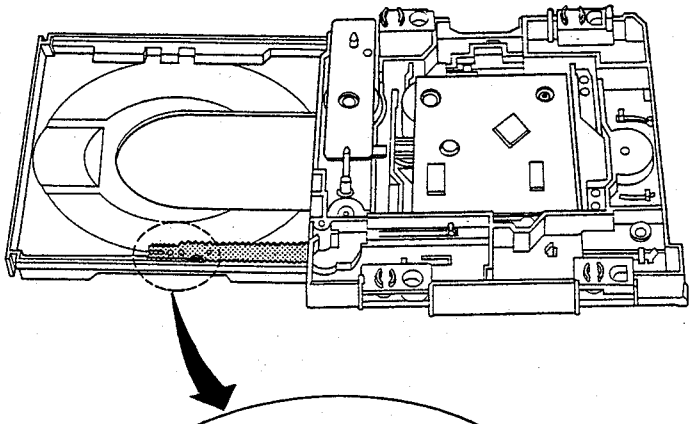
❸ CR2 : Remove 4 screws ⓐ ⓑ ⓒ ⓓ, and remove the clamp plate.
CR2NL CR2NS : Remove 2 screws ⓐ ⓑ, and remove the clamp plate.



❹ CR2 : Raise the guide shaft holder with a (–) screwdriver in the arrow direction and remove the disc tray.
CR2NL CR2NS : Press right and left lock pieces in the arrow direction, release lock from the stoppers and pull out the disc tray.

Final Confirmation

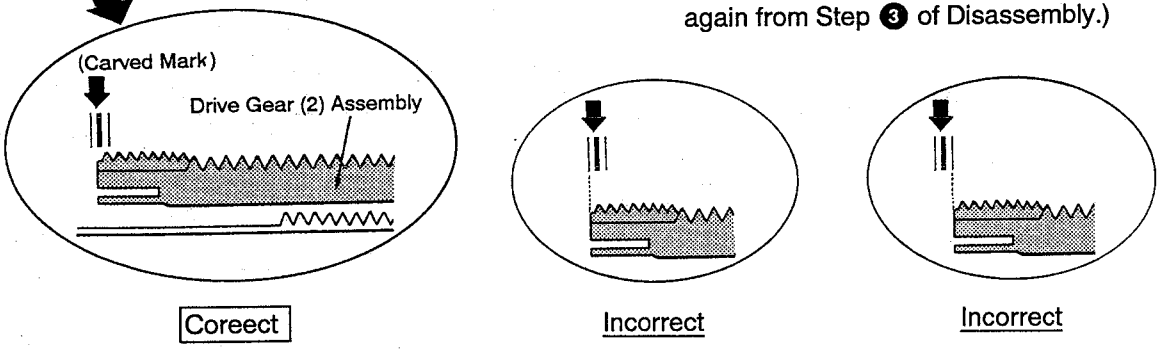
(BOTTOM VIEW)



❶ CR2 CR2NL CR2NS : Carry out Step ❶ of Disassembly and pull out the disc tray to the left end.

❷ CR2 CR2NL CR2NS : If, at this time, the left end of the drive gear (2) assembly is even with the ⬇ mark (thick line) carved on the disc tray, the assembly is complete.

(If not even, trouble such as failure of disc tray in opening and closing or emission of unusual noise may result. Reassemble again from Step ❸ of Disassembly.)

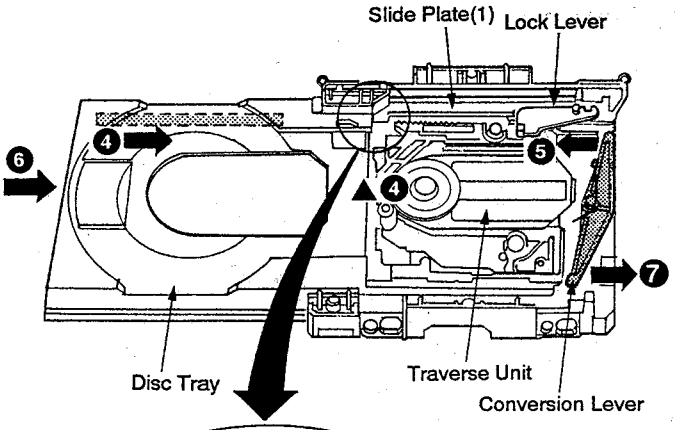


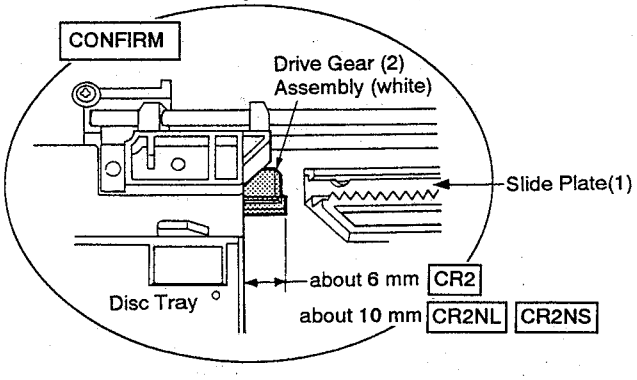
Coreect

Incorrect

Incorrect

Printed in Japan
K951119000HH





❹ CR2 CR2NL CR2NS: Pressing the ▲ section of the disc tray, move the drive gear (2) assembly rightward. (Sliding load is somewhat heavy.)

⇩

CONFIRM

Make sure the drive gear (2) assembly can be seen from the right edge of the disc tray.

CR2 = about 6 mm

CR2NL CR2NS = about 10 mm

❺ CR2 CR2NL CR2NS: Move the conversion lever counterclockwise.

⇩

The drive gear (2) assembly and the slide plate (1) are in gear with each other.

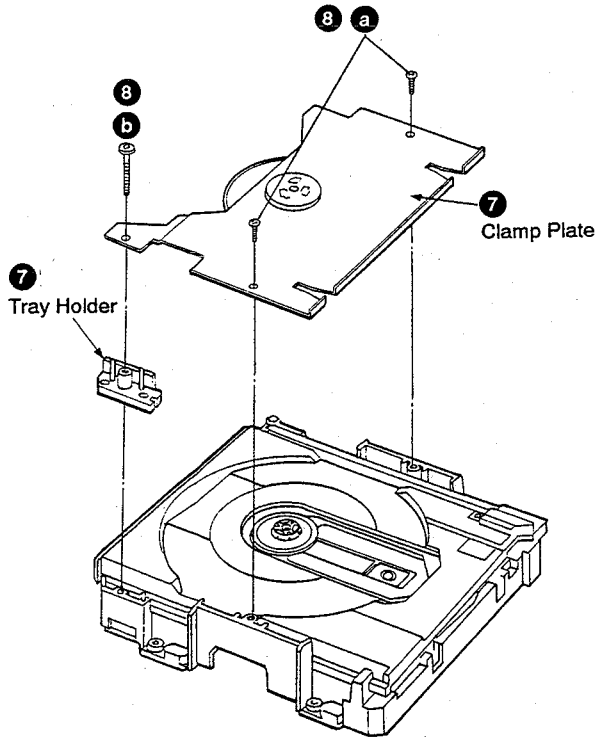
The disc tray moves rightward a little.

CR2 CR2NL: about 10 mm

CR2NS: about 20 mm

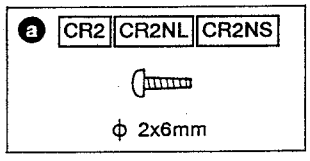
The traverse deck moves down.

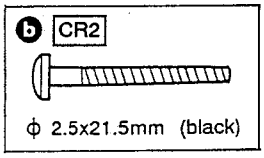
❻ CR2 CR2NL CR2NS : Close the disc tray.



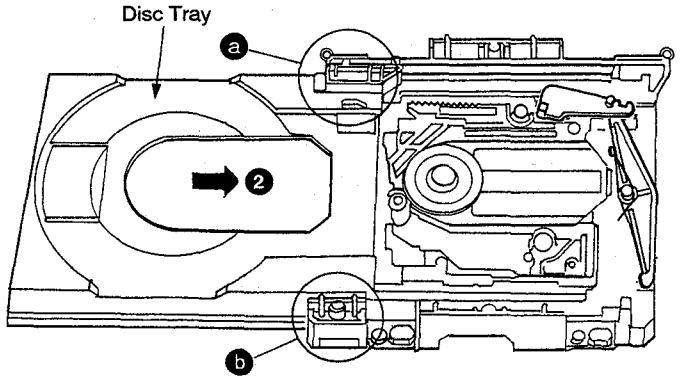
❼ CR2 : Mount the tray holder to the loading chassis, and then mount the clamp plate.
CR2NL CR2NS : Mount the clamp plate to the loading chassis.

❽ CR2 : Mount 3 screws ⓐ ⓑ.
CR2NL CR2NS : Mount 2 screws ⓐ.



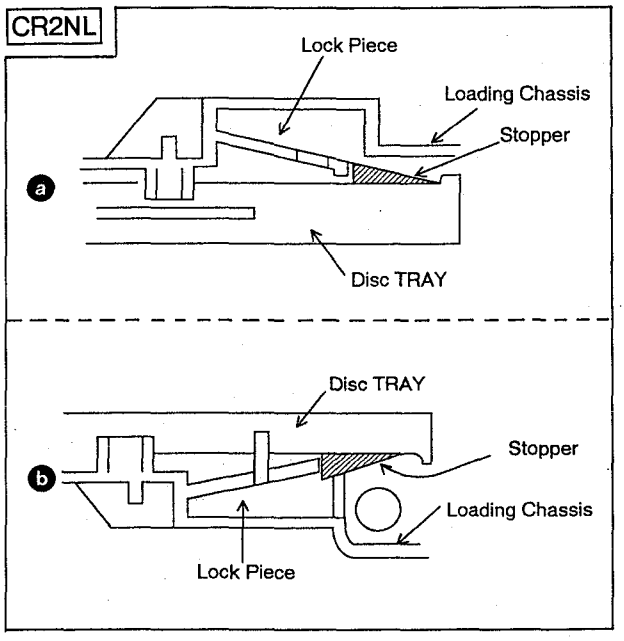


CR2NL CR2NS

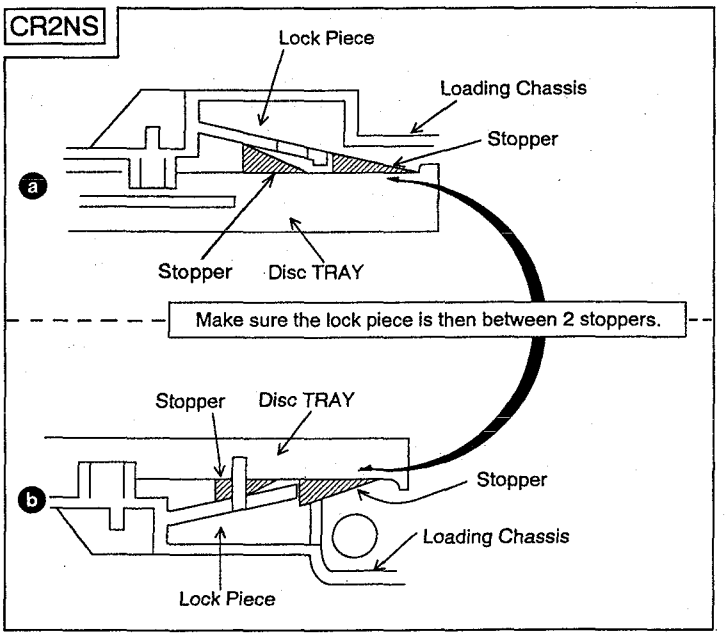


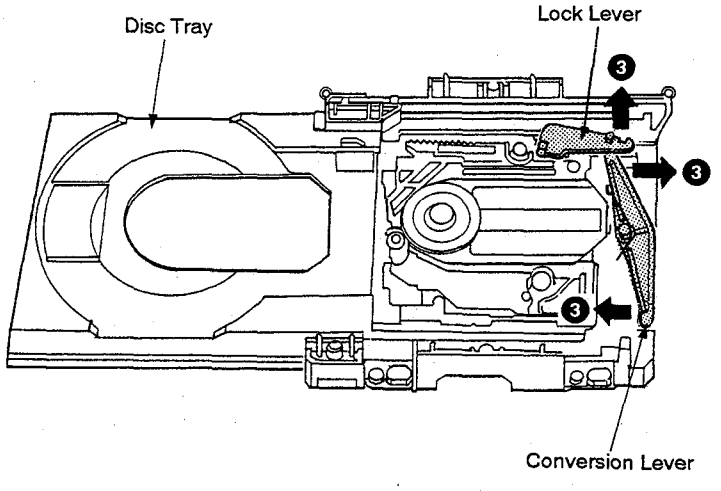
❷ CR2NL CR2NS : Insert the disc tray from the front of the loading chassis. At this time, the disc tray stopper and the loading chassis lock piece should be positioned as shown below:

CR2NL



CR2NS





❸ Move the lock lever in the direction.

⇩

Conversion Lever Unlocking

⇩

Leaving the lock lever moved as it is, turn the conversion lever clockwise.

⇩

Traverse Deck moves up.

Reassembly

<Procedure>

❶ Move the drive gear (2) assembly.

↓

❷ Mount the disc tray.

↓

❸ The traverse deck ascends.

↓

❹ Movement of the drive gear (2) assembly and confirmation

↓

❺ The traverse deck descends.

↓

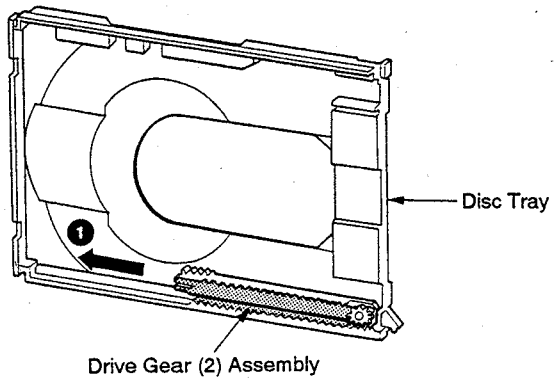
❻ Close the disc tray.

↓

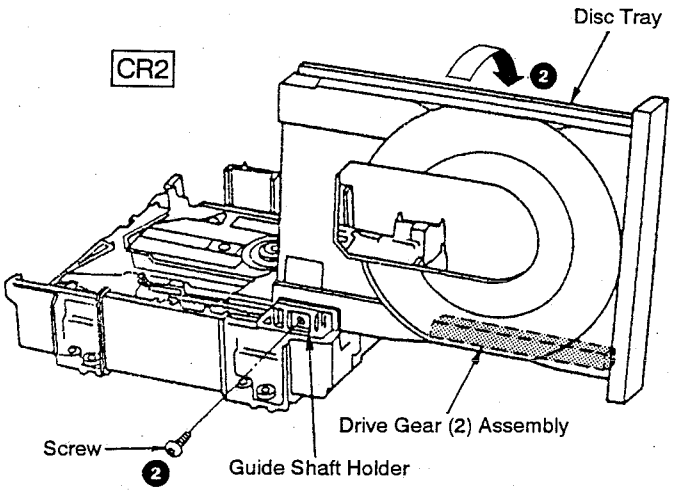
❼ Mount the clamp plate.

<Instructive Points>

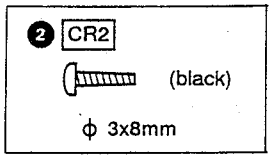
CR2	CR2NL	CR2NS
Move it to the left end of the disc tray.		
Mount it to the guide shaft holder with 1 screw.	Adjusting the loading chassis to the disc tray groove, have it pass 1 stopper.	
	1 stopper	2 stoppers
Unlock the conversion lever and move it clockwise.		
Fixing the disc tray, move the drive gear (2) assembly rightward.		
Confirm: about 6 mm	Confirm: about 10 mm	
Move the conversion lever counterclockwise.		
Push it in by hand.		
• 3 screws • Mount the tray holder.	2 screws	



❶ CR2 CR2NL CR2NS : Move the drive gear (2) assembly on the back side of the disc tray to the left end.

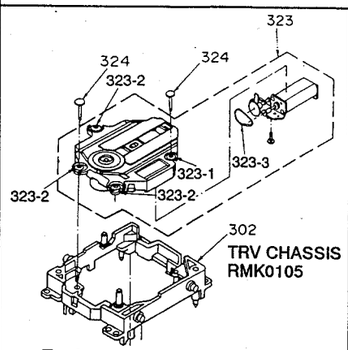
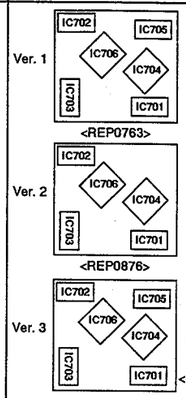
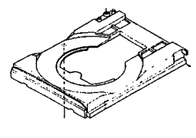
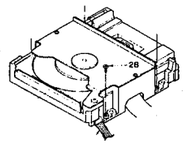
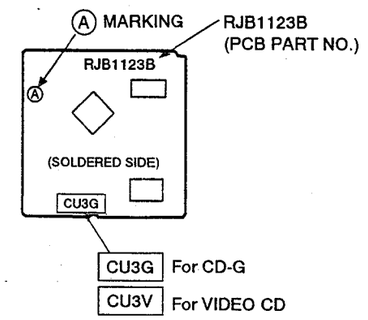
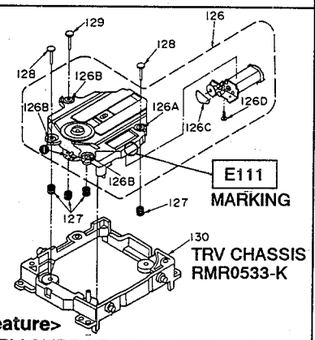
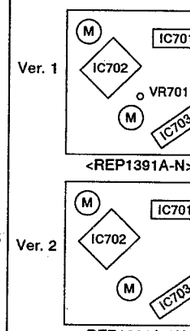
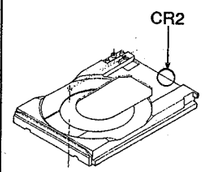
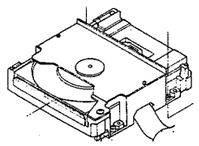
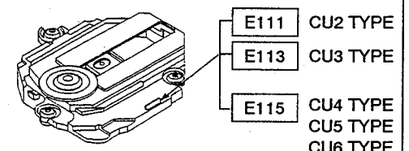
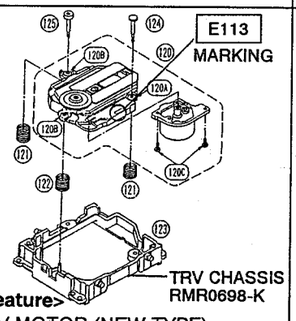
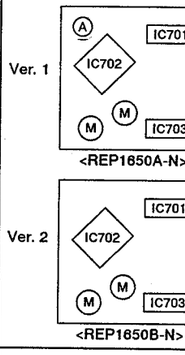
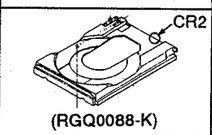
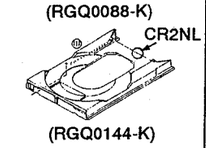
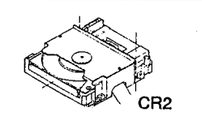
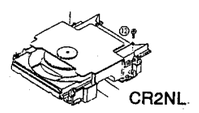
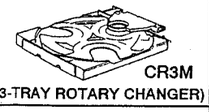
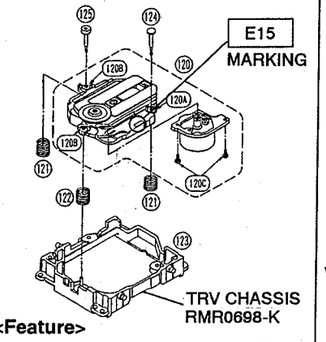
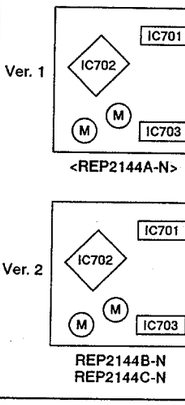
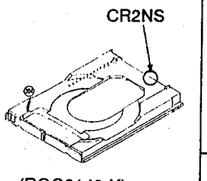
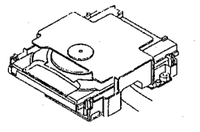


❷ CR2 : Mount the disc tray to the guide shaft holder with 1 screw, and get the disc tray down in the arrow direction.



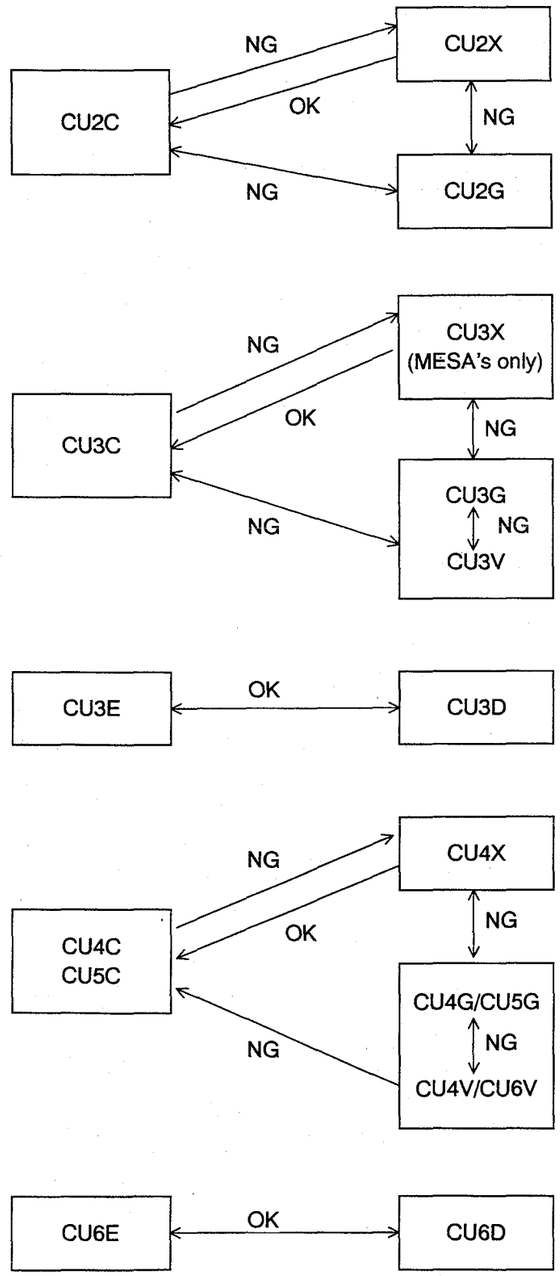
CD TRAVERSE CAREER TABLE

T. I.

	TRV UNIT ASS'Y	TRV CONSTRUCTION & FEATURES	SERVO P.C.B. & IC PART NO.	TRAY	CD MECANISM NO.	CD UNIT PART NO.	OSC.	USE	P.C.B. ASS'Y PART NO. / P.C.B. PART NO.	REMARKS
1	S0DD110Z (CU1 TYPE)	 <Feature> • TRV SUPPORTED, 2-POINT TYPE	 Ver. 1: IC701 AN8800SCE2; IC702 TCA0372DM2R; IC703 AN8377N; IC704 MN6650A; IC705 MN6475A; IC706 MN6626 Ver. 2 / Ver. 3: IC701 AN8800SCE2 / AN8800SCE2; IC702 TCA0372DM2R / TCA0372DM2R; IC703 AN8377N / AN8377N; IC704 MN6650A / MN6650A; IC705 — / MN6477A; IC706 MN6626 / MN6626	 (RMK0103)	 CR1	CUI	CERAMIC	CD	REP0763 / (RJB0418A) REP0876 / (RJB0493A) REP1203 / (RJB0418B)	〔PART NO. MARKING SAMPLE〕 (CD SERVO P.C.B.)  CU3G For CD-G CU3V For VIDEO CD
2	RAE0111Z (CU2 TYPE)	 <Feature> • TRV SUPPORTED, 4-POINT TYPE	 Ver. 1: IC701 AN8802SCE1V; IC702 MN66271RA; IC703 AN8389SE1; VR701 Best Eye Ver. 2: IC701 AN8802SCE1V; IC702 MN66271RA; IC703 AN8389SE1; VR701 Deleted	 (RGQ0088-K)	 CR2	CU2C	CERAMIC	CD	REP1391A-N / (RJB0821A)	(TRV DECK) 
						CU2X	CRYSTAL	CD	REP1391B-N / (RJB0821B)	
						CU2G	CRYSTAL	CD-G	REP1391C-N / (RJB0821C)	
3	RAE0113Z (CU3 TYPE)	 <Feature> • TRV MOTOR (NEW TYPE) • TRV SUPPORTED, 3-POINT TYPE	 Ver. 1: IC701 AN8802SCE1V; IC702 MN66271RA; IC703 AN8389SE1; X701 RSXZ16M9M02T (SERAMIC) Ver. 2: IC701 AN8802SCE1V; IC702 MN66271RA; IC703 AN8389SE1; X701 RSXB16M9J01T (CRYSTAL)	 (RGQ0088-K)  (RGQ0144-K) (PGT0014) (RFKNLCH555PK)	 CR2  CR2NL  CR3M (3-TRAY ROTARY CHANGER)	CU3C	CERAMIC	CD	REP1650A-N / RJB1123A Ⓜ (RJB1123C)
						CU3G	CRYSTAL	CD-G	REP1650B-N / RJB1123B Ⓜ (RJB1123F)	
						CU3V	CRYSTAL	VIDEO CD	REP1893A-N / (RJB1123E)	
						CU3E	CRYSTAL	CD CHANGER	REP1843B-N / (RJB1123H)	
						CU3D	CRYSTAL	CD CHANGER	REP1843A-N / (RJB1123D)	
4	RAE0150Z (CU4 TYPE) (CU5 TYPE) (CU6 TYPE)	 <Feature> • OPTICAL PICKUP (NEW TYPE) • TRV SUPPORTED, 3-POINT TYPE	 Ver. 1: IC701 AN8835SBE1; IC702 MN662740RM1; IC703 AN8389SE1; X701 RSXZ16M9M01T (SERAMIC) Ver. 2: IC701 AN8835SBE1; IC702 MN662740RM1; IC703 AN8389SE1; X701 RSXB16M9J02T (CRYSTAL)	 (RGQ0143-K)	 CR2NS	CU4/CU5C	CERAMIC	CD	REP2144A-N / (RJB1478A)
						CU4X	CRYSTAL	CD	REP2144C-N / (RJB1478C)	
						CU4/CU5G	CRYSTAL	CD-G	REP2144B-N / (RJB1478B)	
					SL4 (5-TRAY ROTARY CHANGER)	CU4/CU5V	CRYSTAL	VIDEO CD	REP2144E-N / (RJB1478E)	
					CR5T (TOP OPEN 3-TRAY)	CU4/CU6E	CERAMIC	CD CHANGER	REP2144D-N / (RJB1478D)	
					CR50 (CHANGER)	CU6D	CRYSTAL	CD CHANGER	REP2144F-N / (RJB1478F)	

〔CAUTIONS〕

1. After discontinuation of production, the P.C.B. cannot be supplied.
2. Supply of the P.C.B. is for models manufactured in 1995.
3. Ⓜ mark is on the P.C.B. manufactured by MESA.
4. TRV: Traverse
5. ▨ Mark means that the part is under development at present.
6. Ⓐ Mark means that the part has been changed from CU2 type to CU3 type and it is not interchangeable because of difference in Trv Deck, Servo PCB., Motor, etc.

<table>
<tr><th></th><th>TRV UNIT ASS'Y</th><th>'91 MODELS</th><th>Midway Changeover Models (Oct. '92 Onward)</th><th>INTERCHANGEABILITY</th></tr>
<tr><td>1</td><td>S0DD110Z
(CU1 SERIES)</td><td>SA-HD52 RX-DT55 (Top open)
SA-CH55
SL-CH700
SL-CH900
SL-E10
SL-PG100
SL-PG300</td><td>CU1 ⟶ CU2
SL-PJ28 RX-DS101 (Top open)
SL-PJ38 RX-DS202 (Top open)
SL-PJ316 RX-DS303 (Top open)
SA-CH11 RX-DT610 (Top open)
SA-CH33 RX-DT630 (Top open)
RX-DT680 (Top open)</td><td rowspan="4">● No interchangeability because each type of TRV has a different shape.
● Only some of Servo P.C.B. can be intervchanged as follows:
  </td></tr>
<tr><td>2</td><td>RAE0111Z
(CU2 SERIES)</td><td>'93 MODELS
SL-CH550 RX-DT670 (Top open)
SL-CH750 RX-DT401 (Top open)
SL-CH950 RX-DT501 (Top open)
SA-CH350 RX-DT701 (Top open)
SL-PG340
SL-PG440</td><td>Midway Changeover Models (May. '94 Onward)
CU2 ⟶ CU3
SA-CH150 RX-DT401 (Top open)
SL-CH505 RX-DT501 (Top open)
SL-CH707 RX-DT610 (Top open)
SL-DH30 RX-DT630 (Top open)
SL-DH66 RX-DT670 (Top open)
SL-PJ28 RX-DT675 (Top open)
SL-PG340 RX-DT680 (Top open)
SL-PG440
SL-PJ316</td></tr>
<tr><td>3</td><td>RAE0113Z
(CU3 SERIES)</td><td>'94 MODELS
SA-CH31 RX-DS15 (Top open)
SA-CH303 RX-DS25 (Top open)
SL-CH40 RX-DS35 (Top open)
SL-CH80 RX-DT620 (Top open)
SL-CH90 RX-DT640 (Top open)
SL-CH515 RX-E250 (Top open)
SL-CH909 RX-E300 (Top open)
SL-PD665 (5-Tray Changer)
SL-PD667 (5-Tray Changer)
SL-PD867 (5-Tray Changer)
SL-CH967 (5-Tray Changer)</td><td>'95 MODELS
SA-CH30 SL-PG350 RX-DS05
SA-CH32 SL-PG450 RX-DS07
SA-CH72 SL-CH51 RX-DT401 (Top open)
SA-CH73 SL-VM500 RX-DT600 (Top open)
SA-CH52 SL-VM510 RX-DT670 (Top open)
SA-CH170 SL-CA1080 RX-DS550 (Top open)
SL-CH404 SL-CA1060
SL-CH505 SL-CA1180
SL-CH510 SL-VC910
SL-CH610
SL-PJ28
SL-PJ38</td><td>Midway Changeover Models (Sep. '95 Onward)
CU3 ⟶ CU4
SL-CH530 RX-DS10
SL-CH538 RX-DS14
SL-CH730 RX-DS22
SL-CH738 SL-VM510
SL-PD349 RX-DT650
SL-PD469 RX-DT690
SL-PD687 RX-DT30
SL-PD787
SL-PD887
SL-PD987</td></tr>
<tr><td>4</td><td>RAE0150Z
(CU4 SERIES)
(CU5 SERIES)
(CU6 SERIES)</td><td>'95 MODELS
RX-ED70 RX-ES50 SC-CH570 SC-CH330
RX-ED90 SC-HD10 SC-CH74
RX-ED100 SC-CA01 SC-CH75
RX-DS790 SC-HD7 SC-CH34
RX-DS750 SC-CA7
RX-DS770 SC-CA10
RX-DT530 SC-CH730
RX-DS520 SC-CH770
RX-DS515</td><td></td></tr>
</table>

Printed in Japan
K960220000YY